

# The Mining Journal

## RAILWAY AND COMMERCIAL GAZETTE

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

No. 1126—VOL. XXVII.]

London, Saturday, March 21, 1857.

(WITH STAMPED . . . SIXPENCE.  
(SUPPLEMENT) { UNSTAMPED. FIVEPENCE.

MINING EXCHANGE OF LONDON.  
The following are MEMBERS of the MINING EXCHANGE:—

J. Horren.	J. J. Reynolds, jun.
J. H. Hitchins.	H. B. Rye.
W. Michell.	George Spratley.
G. Moore.	T. P. Thomas.
J. H. Murchison.	J. S. Tripp.
J. Painter.	Watson and Quell.
J. R. Pike.	P. Watson.
Powell and Cooke.	N. F. Watson, Hon. Sec.

and Eagle-court, Finch-lane, March 20, 1857.

R. JAMES CROFTS, MINING AND SHAREBROKER,  
No. 1, FINCH LANE, CORNHILL, LONDON, TRANSACTS BUSINESS,  
BUYING AND SELLING, for immediate cash.  
DIVIDEND MINES, well selected, are the best of any known investments—paying  
15 to 20 per cent. per annum. The choice of NON-DIVIDEND  
MINES for speculation requires careful discrimination.  
CROFTS, although not in the practice of recommending particular shares, can  
draw from calling special attention to the following PROXIMATE DIVIDEND  
MINES, as being likely, in the course of this year, to pay a percentage on present  
value far exceeding any income to be derived from dividends. The mines indicated  
as worthy immediate attention are—Wheat Sidney, 54½%; Great Hawes, 5%; Caleston Consols,  
Wh. Margery, 53½%; Great Hawes, 25%; Ludcott, 40%; Wh. Edward,  
Cradock Moor, Gonamena, Kelly Bray, Collacombie, Grambler and St. Ambys,  
Hill, Drake Walls, Trelawny, Carnforth, Great Vor, and Catherine and Jane,  
Weston. The most precise information given on application, on the actual  
value of all the above, which Mr. CROFTS considers are an unacceptable selection.

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R. JAMES LANE, No. 29, THREADNEEDLE STREET, has  
BUSINESS TO TRANSACT in most of the DIVIDEND and PROGRESSIVE  
MINES; and begs to refer to his Weekly Mining Review, published every Friday.

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11, ROYAL EXCHANGE, LONDON (E.C.)  
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INVESTMENTS, paying, as they do (in dividends every two or three months),  
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usually advance in price 500 per cent., or more.

TER WATSON, MINING BROKER, having 12 years' experience in every  
branch of mining and its management, together with an extensive and regular  
correspondence with mining agents and others in Cornwall, Devon, and elsewhere,  
enabled to judge of and select mines of intrinsic value. TER WATSON, being a  
member of the Mining Exchange, will forward a list of prices when required, and  
will be consulted daily as to purchases, sales, &c.

Bankers: Union Bank of London.

Commission 1½ per cent. on all transactions.

TER WATSON is a BUYER or SELLER of the following, at prices affixed:—

Buyer.	Seller.	Buyer.	Seller.	
Alfred Consols	£ 21½	22½	10 Rose, and Herland £ 5	5
Wheat Edward	25 1s. 9d.	5 1s.	Great Alfred	9 1s.
East Alfred	2	25	1 Mary Ann	42 1s.
North Frances	17 1s.	18 1s.	2 Ding Dong	24
Kelly Bray	16s. 0d.	18s. 9d.	20 Pollard.	5
Rosewarne	41 1s.	48	1 East Basset	63
Trelawny	22 1s.	23 1s.	25 Ludcott.	31s. 6d.
Carn Bras	55	60	1 Wheat Margaret	67
South Frances	330	342½	5 East Wh. Margaret	10 1s.
Cargoll	41	44	1 Wheat Basset	265
Wheat Wrey	61	65	5 Trelawny	5
Sorridge Consols	31s. 2d.	32s. 9d.	25 Gawton	10s. 0d.
Pendean	35s. 0d.	40s. 0d.	20 Tavy	12s. 6d.
Drake Walls	3	3½	3 Par Consols.	22 1s.
Trewetha	31 1s.	32 1s.	25 Catherine and Jane.	10s. 6d.
			10s. 0d.	12s. 6d.

3. Threadneedle-street, London, March 20, 1857.

MINING ENGINEERS FOR IRELAND.—  
Messrs. BOUNDY and SMITH, 15, ST. ANDREW STREET, DUBLIN,  
make to SURVEY, VALUE, and REPORT upon all descriptions of MINES  
and MINERAL PROPERTY, PREPARING PLANS and SECTIONS of same, and  
ORGANISATION of ASSOCIATIONS for working mines under the Limited  
Ability Act.

GEORGE SPRATLEY has FOR SALE the following SHARES,  
or any part thereof, at net prices:—

Tavy Consols.	35 Peden-dres.	10 Wheat Edward, £1 1s.
Par Consols.	23.	50 South Condurrow, 2s.
Lady Bertha, 1s. 6d.	10 Alfred Consols, £2 1s.	10 East Alfred, £2 1s.
East Russell, 7s. 6d.	15 Great Alfred.	5 East Basset, £1 1s.
West Grenville, 6s.	10 Great Wh. Vor, 53½%.	2 Ding Dong.
Wheat Harriet, 5½%.	50 Nanteos, 52.	5 South Carn Bras, 47.
Wheat Edward, 5½%.	15 Trewetha, 53%.	10 Lelant Consols.
East Basset, 50.	5 North Croft.	3 Carn Bras, 26½%.
Grambler, 2107½%.	20 Drake Walls, £3 1s.	50 St. Day United, 21 1s.
East Margaret.	2 Trelawny.	20 West Polberro, £3.
Wheat Wrey.	50 Pollard, 18s. 6d.	10 Balnoon.
Rosewarne Uni., 243½%.	100 Castell, 11s.	15 Cook's Kitchen, 24½%.
Margaret, 21½%.	10 Pendean, £2.	60 West Par, 10s.
Wheat Wrey.	150 Tamar Consols, £1 1s.	50 Tamar Consols, 24½%.
Rosewarne Uni., 243½%.	100 Tavy Consols, 24½%.	15 Herdofoot.
Margaret, 21½%.	100 South Carn Bras, 47.	15 Old Broad-street, London, E.C.

FOR SALE, the following, for which any reasonable offer will be  
accepted:—

12 Buller and Basset United.

2 Old Tolgas United.

10 South Gorland.

Apply to GEORGE SPRATLEY, 15, Old Broad-street, E.C.

WINE SHARES FOR SALE by Mr. LELEIAN, 4, CUSHION  
COURT, OLD BROAD STREET, E.C.—10 Carnforth, 2s.; 1 Ding Dong,  
50 South Buller and West Penstrith, 2s. 6d.; 50 Huckworry Bridge, 5s.;  
Buller and Basset United, 22½%; 1 Providence, 40s.; 20 Spears Consols, 25;  
Trelawny Consols; 2 West Buller, 24½%; 20 Charlotte, 5s.; 5 Wheat Kitty (Lelant),  
19½%; 10 Wheat Wrey, 57½%; 14 Bell and Lanarth, 54%; 40 Bell and Borth, 10s.;  
Great Hawes, 24s. 6d.; 500 Molland, 2s. 6d.; 100 Ocia, 11s.; 100 Pendean, 37s. 6d.;  
Camborne Vean, 42½%; 10 Stray Park, 54%; 100 East Providence, 21 1s.; 5 Wheat  
Edward, 51 1s.; 20 South Ellen, 6s.; 100 Guskas, 6s.; 10 Margery, 51 1s.; 5 North  
Frances, 51 1s.; 1 East Basset, 50s.; 200 Chancorville; 2 Margaret; 2 Cargoll; 25  
Castell, 2s.; 50 Catherine and Jane, 10s.; 4 Herward. And a great many others  
numerous for an advertisement.—March 20, 1857.

R. GEORGE EUDGE, of 4, BIRCHIN LANE, CORNHILL,  
LONDON, has SHARES FOR SALE at the following prices:—

10 Catherine and Jane, 10s.	5 Wheat Edward, 23½%.	20 Peden-dres.
50 Silver Brook, 3s. 6d.	2 Wheat Margaret.	40 South Gorland.
50 Calstock Consols, 50s.	3 North Frances.	20 East Wh. Margaret.
5 East Alfred, 51 1s.	10 Herdofoot, 22½%.	50 Pendean, £2.
50 Tavy Consols, 35s. 6d.	50 Castell, 11s.	50 South Providence, 25s.
50 South Side, 4s.	50 St. Day United.	50 Wheat Kitty (Lelant), 23½%.
50 East Russell, 11s.	50 Lady Bertha, 16s.	10 Trelawny, 55.
50 Wheat Creber, 7s. 6d.	50 Hawker.	50 Wheat Emma, 55.
50 South Bog, 51 1s.	50 Trelawny.	50 Gawkton, 12s. 6d.
50 Great Wh. Bus., 58½%.	1 Dev. Great Cons., 240s.	20 Trewetha, 53 1s.
50 West Grenville, 6s. 6d.	100 U. Mines (Tavy), 17s. 6d.	2 Providence.
50 Gr. Wheat Alfred, 210.	100 South Carn Bras, 47.	50 Wheal Buller.

DEPOSIT, LOAN, LIFE, AND FIRE OFFICE AGENCY.—  
MONEY ADVANCED upon HOUSE, LAND, RAILWAY, MINING,  
AND OTHER PROPERTY, to any amount, at a low rate of interest. APPROVED BILLS  
DISCOUNTED, and all monetary transactions effected, on application to Mr. R. C.  
AUSTIN, 47, Old Broad-street, London; and Mr. Austen, Cornwall.

HENRY GOULD SHARP DEALS in all the DIVIDEND  
and PROGRESSIVE MINES; and will give every information to parties wish-  
ing to invest capital, as to those mines which are likely to prove most remunerative.  
2, Church-court, Clement's-lane, Lombard-street, London.

GEORGE MOORE, DEALER IN MINING SHARES,  
1, CROWN COURT, THREADNEEDLE STREET.  
GEORGE MOORE has FOR SALE the following SHARES, or any part, FREE OF  
COMMISSION:—

5 Alfred Consols, £23 1s.	5 North Basset, £29 ½%.	20 Trewetha, 53 1s. 6d.
5 Ding Dong, £29.	5 Par Consols, £23 ½%.	50 Vale of Towy, 18s.
20 Drake Walls, 53 ½%.	1 Rosewarne, 51 ½%.	10 Wheat Arthur, 27 ½%.
5 Gt. Wh. Vor, 53 ½%.	1 South Frances, 53 ½%.	1 Trelawny, 52 ½%.
10 Tincroft, 55.	10 Tincroft, 55.	20 Wheal Wrey, 55.
10 Great Alfred Consols, £23 ½%.	10 Great Alfred, 55.	10 Wheal Luddett, £1 1s.
10 Great Alfred Consols, £23 ½%.	10 Great Basset, 55.	5 Trelawny, 55.
10 Great Alfred Consols, £23 ½%.	10 Great Basset, 55.	50 Edward, 55.
10 Great Alfred Consols, £23 ½%.	10 Great Basset, 55.	50 West Stray Park, 55.
10 Great Alfred Consols, £23 ½%.	10 Great Alfred, 55.	10 South Carn Bras, 55.
10 Great Alfred Consols, £23 ½%.	10 Great Alfred, 55.	1 Buller, £25 ½%.
10 Great Alfred Consols, £23 ½%.	10 Great Alfred, 55.	10 Caldwelwick, 55.
10 Great Alfred Consols, £23 ½%.	10 Great Alfred, 55.	10 Sithney Buller, 55.
10 Great Alfred Consols, £23 ½%.	10 Great Alfred, 55.	50 West Grenville, 55.
10 Great Alfred Consols, £23 ½%.	10 Great Alfred, 55.	10 East Russell, 10s. 6d.

The above are all good progressive mines, and many of them will considerably advance  
in price during the ensuing year.

Every information given respecting the best description of shares, either for in-  
vestment or speculation.

In any business that George Moore is favoured with, in which he is the buyer, he  
will give CASH ON RECEIPT OF TRANSFER; and will allow any purchaser of  
undoubted respectability to have shares registered, and receive certificates of same,  
previous to payment.

TER WATSON, MINING BROKER, will forward a list of prices when required, and  
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## THE DUN MOUNTAIN COPPER MINING COMPANY (LIMITED), NELSON, NEW ZEALAND.

Capital £75,000, in shares of £1 each, with power to increase the same. Deposit 5s. per share on application, and the remaining 15s. on allotment and issue of the shares.

BOARD OF DIRECTION.  
ALEXANDER MORRISON, Esq., of the firm of A. Morrison and Co., Austinfriars, and Morrison and Selander, Nelson.  
JOSEPH STAYNER, Esq., Fenchurch-street.  
ALEXANDER MORRISON, Esq., of the firm of John Gladstone and Co., White Lion-court, Cornhill.

ROBERT PORTER, Esq., Australian Merchant, Billiter-street (late of Sydney).  
JOSEPH ROBERT MORRISON, Esq., Theobalds, Herts (late of the firm of James Morrison and Co., Philpot-lane).

AUDITORS—William Brand, Esq., Fenchurch-street.  
" Charles Hobson, Esq., Crown-court, Threadneedle-street.  
BANKERS—The Union Bank of London.

SOLICITORS—Messrs. Oliverson, Lavis, and Peache. BROKER—Robert Potter, Esq., Shorter's-court, Throgmorton-street.  
SECRETARY—Frederick Saunders, Esq.

OFFICES—No. 6, GREAT WINCHESTER STREET, LONDON.  
CORRESPONDENTS IN NELSON, NEW ZEALAND.  
D. Selander, Esq., of the firm of Morrison and Selander.  
W. R. Nicholson, Esq., of the firm of Nicholson and Ridings.

This company is established to work the Dun Mountain Copper Mines, in the province of Nelson, New Zealand, and within ten miles of that port.

These mines were discovered in the early part of the year 1852 by a mineral surveyor of considerable experience, who reported the discovery to the New Zealand Government, upon which steps were taken by the authorities as well as by the inhabitants of Nelson, to have a careful survey made of the district, with a view to prove the existence of the mineral products thus brought to their notice. The result of the explorations made by the government geologist, and confirmed by other mineral surveyors, was satisfactory. Sir George Grey, the then governor, directed the publication of the same in the Government Gazette of June 29, 1852; and a company was consequently formed at Nelson, on the 8th of October, in the same year, under the title of "The Cook's Strait Mining Company."

The resources of the colony being very limited, the promoters determined to despatch an agent to England to raise the amount necessary for the successful opening of the mines. This gentleman reached England in March 1854, the precise period of the declaration of war with Russia; and, therefore, at a most inopportune moment for promoting the views of the Nelson colonists. Nevertheless, induced by the very favourable specimens which were brought over, by the high character of the parties he represented in the colony, as well as the documents transmitted by them, the gentlemen whose names appear upon the direction, with others purchased the freehold, with mineral rights, of a portion of the Dun Mountain and adjacent lands, comprising about 1500 acres.

To ascertain further the value of the mines a staff of twenty-six men, with ample materials for prosecuting the works were despatched; and on their arrival in New Zealand their attention was directed to the existence of the lodes in an elevated part of the mountain, from which eight tons of copper were extracted and sent over to this country, and found to contain a percentage of 17 1/2 of fine copper.

In order further to test the value of the lodes they were searched for, and again struck in a gully 1800 ft. below the previous workings, by an adit of 6 ft. Conclusive evidence having been thus obtained of the mine holding good in depth, two tons of ore were extracted and forwarded, and the result of this parcel, after having been fairly dressed for market at Swansea, yielded 23% per cent. of fine copper, the refuse dust producing from 6% to 13% per cent. per ton of ore, which consist of a grey sulphurite with rich red and black oxide and native copper, also strong yellow sulphurite, the details of which may be seen in the annexed letter from Messrs. Henry Bath and Son, of Swansea.

Of the total number of 75,000 shares, 6000 fully paid up shares are taken by the original promoters of the Cook's Strait Mining Company in New Zealand; and by agreement with that company, 5000 additional shares are to be allotted and paid for in New Zealand; and the promoters in England take 20,000 fully paid-up shares in satisfaction of the cost of the preliminary investigation, the transfer of the rights of the Cook's Strait Mining Company at Nelson, the purchase of the freehold of the property, in-meeting the heavy expenses incurred by despatching men and materials from this country, and their maintenance and wages while occupied in making the road between Nelson and the mine, nine miles of which were completed by the last advices.

There consequently remain 44,000 for distribution, for which application may be made in the annexed form to the broker, Mr. Shorter's-court, Throgmorton-street, or to the secretary, at the company's offices, 6, Great Winchester-street.

Previously to any application for shares, 5s. per share must be paid as a deposit to the company's bankers. A receipt will be given by the bankers for the 5s. per share, which must be forwarded with the application. If no shares are allotted, the receipt and the money will be returned without delay or deduction.

If shares are allotted, and the money shall exceed the whole deposit of 5s. per share on the shares allotted, the surplus will be returned or applied towards the 15s. to be paid on allotment and delivery of shares.

If it should fall short, the deficiency must be paid within 14 days after allotment, or the whole will be forfeited.

Certificates of shares, under the Joint-Stock Companies Act, 1856, will be delivered to the applicant when the remaining 15s. per share shall be paid up.

LETTER FROM MESSRS. HENRY BATH AND SON, MINING OFFICE, SWANSEA, (MARCH 10, 1857), TO FREDERICK SANDERS, ESQ., LONDON:—

"DEAR SIR.—In reply to your favour of the 6th inst., we beg to make the following remarks on the 40 bags of copper ore received from your mine on the Dun Mountain, New Zealand.

The contents of these bags evidently consisted of the whole of the working of the lode, without any attempt at dressing.

We dressed them by picking as well as we were able, and obtained about one-third, which yielded 23% per cent. fine copper of the total quantity we set aside, the earthy portions and refuse weighing about 5 cwt., but even this contained about 6 per cent. of copper: the whole of the 40 bags contained on an average 16 per cent.

There were several portions of rich oxide, and even pieces of metallic copper, but the ore consisted principally of grey sulphurite, and that the copper is well diffused through the mass, instead of being in rich lumps.

It is further satisfactory that the ore has been found in the same locality, but at some distance from your original workings in the Dun Mountain, an evidence that the copper exists in quantities in that mountain, and that this last lot, worked lower down the mountain, consists of a much larger proportion of sulphurite than the former lot.

On the whole, we should say that the indications are increasingly favourable to your prospects; and, as on a former occasion we expressed an opinion that there was quite sufficient inducement to make a trial, all that has occurred since has only confirmed us in the correctness of that opinion, and of the advisability of going further, than you have yet done in working the mine.

We remain, yours truly,  
HENRY BATH AND SON."

EXTRACTS FROM THE MANAGER'S REPORTS, DATED NELSON, AUG. 13, 1856:—

"Twelve months' experience has enabled me to report as under, which I hope will be found satisfactory: for its fidelity I can vouch:—

EXTENT OF YOUR PROPERTY, ITS CONTENTS AND CAPABILITIES.—The entire estate contains 1857 acres of surface land, all freehold mineral lodes, and comprises the whole of blocks 1, 3, 4, 5, and a portion of block 2. Limestone in vast abundance passes across block 2. It shows itself in the Mitali river, as delineated on the large plan, and all across the high ridge between the Mitali and the Wrey.

Blocks 3, 4, 5, are almost devoid of timber. The soil arid in the extreme, which added to its general altitude—say 2500 ft., renders cultivation hopeless. Blocks 2 and 6 descend to a much lower level. Following the Mitali from the mine first opened to the junction of the Windtrap Gully stream with the Mitali, is a sudden fall of 1800 ft. in that short distance. From that junction to the junction of the Wrey with the Mitali, the fall is considerable, but less precipitous.

NUMBER OF LODES.—The number of lodes within the property no one knows correctly; but I am warranted in saying full twenty may be descended upon, and in all probability very many more; many containing very rich ore in great abundance. I have opened four lodes; out of which I have obtained ore of a most splendid description. These I disengaged; the Old Lode, Dappa's Lode, Floyd's Lode, and the Windtrap Gully Lode; out of all of which I forwarded samples, and have obtained pure native copper from all, except Dappa's.

FACILITY OF WORKING.—The explorations I have made have resulted in establishing beyond dispute the existence of a lode of country singularly good for a one-way traffic, the road always descending. I have also established conclusive evidence of the lodes holding good in depth, by opening the Windtrap Gully Lode at a depth of at least 200 fms. (1200 ft.) below the old mine, and at a further depth of at least 100 fms. (600 ft.) by level also. These lodes will lay more dry ground than can be exhausted by a very large yield in 300 years. The Windtrap Gully Lode turns out magnificient ore at a depth of 300 fathoms, facing nearly two miles in the trend of the lodes; the whole of which will be drained by the main level, without engines or machinery of any sort. By commencing the work in the Windtrap Gully there will be a saving of a mile and a half as regards distance, and the ascent and descent of 1800 ft.

MEANS OF CONVEYANCE TO PORT.—This most essential requirement, I am happy to say, exists in an unusually favourable degree. The wagons may come out of the mine laden, and proceed to the port without shifting the load, working the first mile and a half by means of a self-acting inclined plane, from the mouth of the level to about the junction of the Wrey with the Mitali, and for the last ten miles averaging 1 in 80, by horse power.

ONE SENT HEREWITHE.—We now send 2 tons of ore from the Windtrap Gully Lode. It is the entire produce of two days' working by two men, in entirely unopened country. I send it unredressed. It will permit competent parties to form a better idea of the lode; but it must be dressed properly, as for market, before it is assayed. I have no fear of the result being anything but A1. I also send a box with some chosen specimens, with remarks enclosed; and I can conclude by saying to the subscribers, "You are now in possession of one of the richest mining properties in the world. All that is wanted to render it profitable is a reasonable plan of operations established, and adly pursued, and carried out."

FORM OF APPLICATION FOR SHARES.

To the Directors of the Dun Mountain Copper Mining Company (Limited).

GENTLEMEN.—I request you to allot me shares in the above-named company. I forward you the bankers' receipt for £, being the deposit of 5s. per share, in part payment of each £1 per share. I agree to accept the above number of shares, or any less number that may be allotted to me, and to make up the remaining 15s. per share on the shares allotted, on having the shares delivered. I also authorise you to enter my name in the register of shareholders for the above number of shares, or such number as you may allot to me, and to apply the money paid towards the £1 per share on the shares allotted. If I shall fail to pay up the deficiency within 14 days after notice to me of the allotment, the company may forfeit the above sum to its own use. Notice to me by letter to my address below will be sufficient.

Christian name and surname in full.....

Address in full.....

Description.....

Dated this day of 1857. Description.....

BANKERS' RECEIPT FOR DEPOSIT.

No..... London, 185

Received of the Directors of the Dun Mountain Mining Company (Limited), to be accounted for on demand.

For the Union Bank of London, Cashier.

## BON ACCORD COPPER MINING COMPANY (LIMITED).

Capital £75,000, in 75,000 shares of £1 sterling each.

Deposit 10s. per share on allotment; with power to increase.

To be incorporated and registered under the Joint-Stock Companies Act, 1856, and liability limited to amount of subscription.

DIRECTORS.

WILLIAM HENRY DICKSON, Esq., London, Director of the Scottish Australian Investment Company (Limited).—CHAIRMAN.

GEORGE HAY DONALDSON, Esq., Australian Merchant, London, Director of the North British Australian Company.

ALEXANDER LANG ELDER, Esq., Australian Merchant, London, late Member of the Legislative Council of South Australia.

CHARLES HOLLAND KENDALL, Esq., Merchant, Fenchurch-street, London.

JAMES NELSON SMITH, Esq., Australian Merchant, London, Director of the London Chartered Bank of Australia.

ADOLPHUS WM. YOUNG, Esq., London, late High Sheriff of New South Wales.

AUDITORS—Alexander Grant, Esq., 11, Kensington-gate, Hyde-park, London; George Herring, Esq., Merchant, 12, Old Broad-street, London.

BANKERS—The City Bank, London, and branches.

The National Bank of Scotland, and branches.

The Aberdeen Town and County Bank, and branches.

SOLICITORS—Messrs. Young, Vallings, and Jones, St. Mildred's-court, London.

BROKERS—Messrs. Carden and Whitehead, Royal Exchange-buildings, London.

SECRETARY (pro tem.)—Charles Grainger, Esq.

OFFICES—24, GRESHAM STREET, LONDON.

This company is formed to work the copper in the Bon Accord property, situated immediately adjoining the famous Burra Burra Mines, in South Australia.

No shareholder will incur any liability beyond the amount of the shares allotted; and no call, beyond the 10s. per share paid on allotment, will be made within six months.

Applications for shares must be made in the form annexed to the prospectus. Each applicant for shares will be required to pay in to one of the bankers of the company 5s. per share on the number of shares applied for, in part payment of the deposit of 10s. per share, in exchange for which a receipt will be given, and which receipt must accompany the application. In the event of the directors allotting less than the whole number applied for, the amount paid in to the bankers will be applied towards the deposit of 10s. per share, payable on the number of shares allotted; but in case no allotment is made, the money so lodged will be forthwith returned to the applicant in full.

Prospectuses, with mining reports, plans of the property and the township, forms of application for shares, and bankers' receipts for deposits, may be had of Messrs. Carden and Whitehead, stock brokers, 2, Royal Exchange-buildings; or at the offices of the company, 24, Gresham-street, London.

London, March 7, 1857.

N.B.—The prospectus of the company, which will be found inserted at length in the Times newspaper of Monday, the 9th, and in the Daily News of Tuesday, the 10th of March, 1857, will be forwarded on application.

BON ACCORD COPPER MINING COMPANY (LIMITED).—

Notice is hereby given, that NO APPLICATIONS FOR SHARES in this company will be RECEIVED AFTER MONDAY NEXT, the 23d inst.

By order of the Board, C. GRAINGER, Sec. pro tem.

24, Gresham-street, London, March 18, 1857.

N. B. WHEAL VOR, AND EAST WHEAL METAL TIN MINES, CORNWALL.

A meeting of gentlemen interested in the above mines was held on the 17th day of March, 1857, at the British Hotel, Cocks-pur-street, for the purpose of working, in the most effectual manner, the New Wheal Vor and East Wheal Metal sets, in the parish of Sithney, in the county of Cornwall, held by Messrs. Francis Daniell and William C. Vivian, under grant from Christopher Wallis Popham, Esq., at 18th date,

A. H. SARGENT, Esq., at the request of the meeting, took the chair.

The terms for the transfer of the property from Messrs. Daniell and Vivian having been mentioned, it was resolved, —That the same be accepted.

Resolved.—That the company be called the New Wheal Vor and East Wheal Metal Mining Company; and that the capital be £20,000, in 6000 shares of £3 each, of which £1 per share is to be paid on allotment.

Resolved.—That the New Wheal Vor and East Wheal Metal Mines be now carried on on a more extensive scale than heretofore; and that with this a steam-engine be at once erected on the Great North lode in New Wheal Vor.

Mr. Daniell having mentioned that he was in a position to offer an engine suitable for the purpose, with 24 head stamping-mill attached, and everything thereto belonging, and that the price of the same was £900.

Resolved.—That the engine be taken at the price named by Mr. Daniell.

Mr. Daniell in his capacity of partner since the end of the year 1855, submitted the cost-book of the mines, showing the outlay in the past 12 months, in driving adits, sinking shafts, the erection of an office, storehouse, assay office, &c., and otherwise developing the property, to be £1047 1s. 9d.

Resolved.—That the same be allowed (subject to inspection) and paid from the proceeds of the first instalment of call.

Resolved.—That the mines be worked on the Cost-book Principle.

Resolved.—That there be a board of directors of the company; and that the same consist of five shareholders, two of whom shall be local directors.

Resolved.—That the following gentlemen be the directors:—

W. P. SCOTT, Esq., Lincoln's Inn-fields; A. H. SARGENT, Esq., Lansdown-place, South Lambeth; N. SMITH, Esq., Cocks-pur-street.—Local Directors: F. DANIELL, Esq., Camborne; J. VIVIAN, Esq., Redruth, Camborne; and—

That W. P. Scott, Esq., be the Chairman.

Resolved.—That Messrs. Glyn and Co. be the bankers of the mine in London; and Messrs. Tweedy, Williams, and Co., of Redruth, in Cornwall.

Resolved.—That Mr. Braddon be the secretary and solicitor of the company.

Resolved.—That the offices of the company be, pro tem., at No. 6, Gray's Inn-place, Gray's Inn.

Resolved.—That Mr. W. C. Vivian be the manager of the mines.

Resolved.—That the appointment of sub-agents be made by the manager, subject to the approval of the directors.

The preliminaries of the company having thus been agreed on,

Mr. Daniell rose, and addressing the Chairman, spoke to the following effect:—

He said he had much pleasure in meeting the gentlemen assembled on the present occasion, inasmuch as he felt assured that it must result to their mutual advantage.

The sets of the New Wheal Vor and East Wheal Metal Mines are situated immediately upon the eastern extremity of the justly celebrated Great Wheal Vor and Wheal Metal, which, in point of fact, now forms a large integral part, as to shares, of Sithney Wheal Buller, which, in point of fact, now forms a large integral part, as to shares,

## Original Correspondence.

## THE GOVERNMENT SCHOOL OF MINES, AND EDUCATION OF THE COLLIERS.

SIR.—I must again claim your indulgence in saying a few words on this simple but still knotty question of the education of the coal miner; and in thinking over the various questions which appear to me to affect the vital interests of the collier, I have not neglected the recent melancholy accident at Lund Hill. Having read the evidence which is already before the public with respect to its origin, I must confess that I cannot understand the reasons which various correspondents assign in their communications to your Journal for abstaining from a free and full expression of their opinions on such a momentous subject as the lives of 182 men, until the close of the inquest. I am unable to see any evil that can possibly arise from a contrary procedure, so long as such opinions are dictated in a proper spirit, and with a view to adjust, if possible, some of the difficulties which now interpose between the collier and his safety. On the contrary, I contend that a free expression of views on a subject so vital to the interests of the collier and coal owners would materially assist the jury in deducing correct inferences from the evidence, and thereby enable them to recommend such measures to the attention of engineers and other interested parties as would be conducive to the future safety of the unfortunate coal miner.

Before, however, proceeding to give my own views, as one deeply and practically interested from earliest childhood, with respect to the present management of inspectors, &c., I will advert slightly to the communication of "F. M." which appeared in your Journal of March 14. And, in first place, I beg respectfully to inform him that I would not willingly be second to any one in my appreciation of science in its marvellous applications to practical purposes, increasing the comforts and necessities of life, and, at the same time, reducing the intensity of manual labour. I sincerely believe that science is a most valuable adjunct to an extensive experience: and when both are united in the same intelligence, though possessing only moderate powers of original invention, still I conceive that a nation will be justified in expecting, what I believe will be realised, most felicitous results.

With respect to the institution, professors, and lectures in Jermyn-street, about which your correspondent, "F. M.", speaks in such glowing terms, have never written intentionally in a disparaging tone, so far as the sciences of geology, mineralogy, &c., are concerned; these sciences may, for sight I know, taught in all their length and breadth, with the clearness, and eloquence of a Davy, and with the suggestiveness and comprehensiveness of a Bacon; but I ask, in the name of common sense, what has this to do in preventing those explosions, which I trust are now reached their climax at Lund Hill Colliery? It is not the science which is taught to a few students in Jermyn-street, but its adaptation to accomplish the object contemplated—the reduction of accidents by the better education of the collier—which I, and many others besides, am in question. Who has the real management of a colliery? Not the educated engineer, or the student of geology, but the working collier. Let the public observe the character of the men who are called to furnish information to the jury at Lund Hill. Do these men know of the existence of Jermyn-street? Then what benefit can they hope to realise from few lectures delivered in London to a few hopeful students, at a distance of 200 miles from the scene of the deadly conflict. I will not say that such an institution is impotent, so far as the safety of the collier is concerned, but at one point to the sad fact of 300 valuable lives having been sacrificed within a few months, and thence listen to the plaintive cry of the widow, the orphan, the friend. Can I, a central institution, like that in Jermyn-street, teach effectually the masses of the colliers, so as to contend successfully against the many dangers which interpose between them and their safety? No, is the reply of experience which Nature supplies in rich and beauteous profusion to teach mankind her unerring laws; but does there not require a medium power to adapt and apply these means to the better education of the collier, in those hands alone must be placed the weapons with which to combat successfully the insidious foe—explosive gases, &c. "How many things season'd are to their right praise and true perfection?" Lectures and education respecting collieries are not required in London to the same extent as they are in the mining districts, where the masses of people need instruction in the dangers to which they are daily exposed. Accidents appear to be multiplying apace, for not many days had passed after the tragedy at Lund Hill ere we had to read of another calamity at Shipley, Derbyshire. In this case, two different explanations of which have appeared in this Journal, six valuable lives were lost. I must, however, state that both explanations of this accident appear to me to be so exceedingly improbable that some other cause, of an unknown kind, must have produced the accident in question. But the inquiry, in accordance with ancient custom, pronounced a verdict of accidental death, and the Government Inspector, an enlightened and benevolent man, recommended the use of locked safety-lamps, and which has been adopted. The miners have to work now with locked safety-lamps. Men who are not considered to be sufficiently trustworthy and intelligent to have the ore and free use of an ordinary Davy lamp, are to be sent in future into the midst of danger, minus the power of separating the wire-gauze of the lamp from the vessel containing the oil. The men still retain the capability of placing the lamp in a position where it may meet with various accidents or casualties, the effects of which would not be disturbed by the circumstance of its being locked. May not the roof, the coal, the workman's pick, still render even this use of the lamp highly perilous when placed in the hands of men who are considered incapable of using it properly when unlocked.

I believe neither the Government, the priesthood, nor the employers of labour in general, are sincere in their desire to educate the labouring population, including the collier, of this country. I must reserve any further observations on other topics to a future communication.

COAL-MINER.

MINING SPECULATIONS IN IRELAND—"RIGGING THE MARKET."

SIR.—Is not a miserable thing to find that the Irish correspondent of your Journal no sooner directs attention to the mineral wealth of this country, on the probability of a great company being established to develop a part of these riches, than an important evening Liberal paper, out of its sole disinterestedness to save us from being duped, should devote a whole column of its valuable space to the praise of one company, and to disparage another that has not yet appeared; and which it will be quite time enough to criticise when in existence? Oh! this pure philanthropy, too evidently written for the purposes of the Irish Mining Company to deceive or suggest, for a moment, that its object is anything less than the present and future aggrandisement of this powerful association, who have hitherto ruled with an iron hand the mineral lords of Ireland, and who but for that spirit of aggrandisement would have been doubly powerful. That they have managed tolerably well, employed and encouraged their talented and honest mining staff is beyond all dispute, and they deserve great praise; but that they might not have done much better when they had the whole field to themselves is a more doubtful matter; and from their past history we would infer that had they pursued a more judicious course they would have been one of the wealthiest companies in the empire and, perhaps, they begin to feel some such misgivings, and fearing they cannot rest the roost as they have hitherto done, their trumpet has gone forth sounding their praises, and proclaiming their exceeding excellency, inflicting, as he proceeds, a deserved castigation on some recent mining companies. But, nevertheless, one cannot help feeling that there is another spirit pervading the article in question, and which is nothing less than that the Mining Company of Ireland can and shall be the only one that has any right to exist here. Again, the mining correspondent is severely handled for having misquoted a dividend of 17 per cent. instead of 15 per cent., but which is only a foil to cover his greater offence in directing attention to the preliminary trials of the Irish Mining Company on quartz lodes in search of copper. Correction of errors is not the writer's sole object, it is not so praiseworthy—in fact, it is nothing less than a bid attempt to deter new mining companies from pursuing the same wise course they themselves are doing: or else they have found a mare's nest, and are ashamed to confess they have committed a mistake. Real mine will not be so positive in drawing the unwarrantable conclusions that the Editor of the *Dublin Evening Post* does, that quartz lodes

that are productive of ore in one district, are not to be considered as likely to be metal-bearing in another locality.

This assertion would be treated as ridiculous amongst miners; but, perhaps, he will enlighten the public on these curious anomalies, for there are quartz lodes that no competent miner would hesitate to recommend as worthy of a trial, and there are others that he would as carefully avoid; and if the infallible Irish Mining Company have determined to spend thousands in developing this quartz lode, admittedly of a kindly nature, may not other companies, under like circumstances, be warranted in pursuing a similar course?—and is it possible, because a new mining company is to be established, that Ireland is never to possess but one honest and successful one, and that the Irish Mining Company?

Does their zealous advocate know how many thousands were injudiciously spent upon the Ballycorus Works through the incapacity of their directory?—and is he further aware that competent judges are of opinion that, had there been an enlightened body of men at their head, zealous only for the welfare of the shareholders, much larger dividends would have been paid for years past, and their original shareholders would never have been obliged to sell their shares for a few shillings each?

If the present shareholders are the gainers by former mistakes, let them not, through their trumpeter in the *Evening Post*, asperse the formation of a great company, that will be composed of many honest and estimable men, and likely to be second to no mining association for intelligence and prudence.—*St. Andrew's-st., Dublin, March 18.* BOUNDY AND SMITH.

## ONLY JACK."

SIR.—Some years since, being at one of the exhibitions of paintings and sculpture by northern artists, at Leeds, I was much annoyed at hearing the remark it is "only plaster" applied to the finest models in the room. I was at that time induced to write a paper, entitled "Only Plaster," explaining and showing that "only plaster" contained the real merit—that the marble statues, so much admired, are the mere work of time and mechanical appliance.

It amuses me, though it annoys at the same time, to hear the remark "only Jack" made by parties on the 'Change, and by parties who ought to know better. Poor despised "Jack" keeps excellent company, and is frequently found to be the father of an excellent family, including copper, lead, and silver. By a sad misnomer, he was called by the "old men" the "mother of lead," but at present is honoured with the more scientific appellation of blonde. And now for a little about "Jack." Jack has been, and is still, found in abundance in Cornwall and Devon; also in some parts of Wales, and in the Isle of Man. The back of the Great Laxey Mine is Jack, and the standing of this noble mine is mainly owing to Jack. At this mine the Jack is more carefully dressed than any other; it is cleaned like tin, the lead being all extracted by jiggling-machines, &c. The Jack produced by this mine is very fine in quality, and easily smelted.

Talgarth Mine, in Flintshire, produces Jack, but under very different circumstances; in the lode where Jack appears the lead disappears, and is not associated with the lead, as at Laxey.

At Froncog Mine (one of the Lisburne Mines), there are large quantities of Jack, and the finest and best machinery in the world for dressing it.

All the mines should adopt this machine. The inventor, a Cornishman of the most unpretending manner, will, by the permission of Messrs. Taylor (always cheerfully accorded), show the machine to anyone.

Were this machine in use at Silver Brook Mine, I think she would be enabled to pay dividends out of "Jack" only.

Vast quantities of Jack were found, and still remain, in the back of the richest silver mine ever opened in Cornwall—"Old Shepherds." Jack is also found at East Wheal Rose and Alfred Consols, on the back of the great lode, where it is mixed with copper. It is also found at Boiling Well, at Stray Park, Bal Dhu, Nangiles, Wheal Jane, East Falmouth, Pencorse, and other mines—no bad company to be associated with.

The miners in these localities are always glad to recognise Master Jack, as it is a certain indication of either lead or copper below. Like mundic, Jack is a surface mineral—that is to say, it is most frequently found on the backs of lodes; if on an east and west lode copper in depth may be looked for; if on a north and south course lead may be relied on.

A few years since Jack was not worth raising, as the foreign spelter was so cheap; it would not pay for smelting in this country; but now that spelter is up to such a price, and the consumption is hourly increasing, Jack will pay, though the liberality of the smelters does not allow them to give the miner a fair price for the article.

The price varies from 3*s.* 8*d.* to 3*s.* 2*d.* per ton. The Laxey Mines command the highest price; next to which Pencorse and Silver Brook Mines are valued. At Pencorse, the Jack is chiefly sent away in the rough state—a very judicious plan, as Jack, when bruised fine, is very light, and large quantities escape in the water.

If some of these mines made returns of copper instead of Jack to the amount they do—say, in the monthly ticketing list, Silver Brook, 100 tons copper, at 3*s.* 8*d.* per ton; Pencorse, 80 tons copper per month, price 3*s.* 7*s.* 6*d.* per ton—these mines would be thought much more favourably of than they are at present, though the returning of Jack is not attended by a tinge of the expenses copper entails.

You, Mr. Editor, would do the state some service if you would publish the returns of blonde and zinc ores regularly, and let the world see that "only Jack" is a very important article of mining and commerce, and I am fully convinced we should hear less of the contumelious remark, "only Jack."—*March 19.*

GEORGE HENWOOD.

## THE BESSEMER PATENT—SHEFFIELD MANUFACTURES.

SIR.—It is well known that in August last Mr. Bessemer seemed to astonish the multitude of chemists and philosophers who either heard or read his new Theory for making Iron and Steel. It is impossible to open a newspaper dated from Sept. to Jan. but there is some kind of composition which relates to the new discovery in making iron without the labour and expense of puddling. Even the *Illustrated London News* set its artist to work and added animated language to the production of the engraver to fill their readers with wonder and admiration of the invention. Lectures were delivered at the Polytechnic, and doubtless the mass of the people were induced to think that Mr. Bessemer had made a discovery which would be a source of wealth, and an imperishable national convenience. Had Mr. Bessemer acted less conscientiously, and offered his discovery to the public, any amount of shares would have been purchased, and he might have reaped a splendid harvest without any risk worth taking into account; but with a degree of honour worthy of a man of true English disinterestedness he took on himself the patent, and is abiding the issue. Having a practical acquaintance with the iron and steel trade, and aware of the insufficiency of a single experiment, I ventured to lay before the public in a short paper the consequences which would follow the introduction of iron and steel manufactured on the new process to several important branches of our great national trade. The medium I employed was *Zet's Magazine* of Jan. 1857—aware that its readers were not generally inclined to enter elaborately into the discussion of the chemical properties which combine in the construction of the most valuable of metals, but that there were some reasons why they should have a plain and concise description of what the patent professed, and the manner in which their interests would be affected by its application to railway and ordinary carriages. I could not have anticipated the amount of anger which this contribution has called forth; but the present number of that magazine contains a letter breathing hate and ire, and denouncing my explanation as "ridiculous" and calling in question my knowledge of chemistry. Of course such assertions are of no consequence to the public, nor have they the least impression on me; Mr. Bessemer is doubtless a chemist, but, like an honest man, he has not tried to perplex the public with chemical dogmas, but has submitted to experiment, which it appears proves very much inferior to what generally was expected. It must be admitted that between denouncing a system as a failure and showing its improper application there is a very wide difference. The advocates of the Bessemer patent were going to remove our dependence upon Sweden and Russia, to have our railways and carriages furnished with cheap iron, to take away the expense of timber by iron beams, and to Bessemerise everything we touch, from a penknife to a ship's anchor; this seemed going too fast, and a little consideration and practical observation was self-evident. It would be very presumptuous for me to attempt an explanation of the Bessemer patent to the readers of this Journal, but my definition in *Zet's Magazine* only three lines and three words—as correct an abridgement as I could possibly produce:—"He (Mr. Bessemer) has a receiver for the liquid iron as obtained from the furnace, and he supplies a blast which produces a violent motion of the metal, which afterwards is considered iron or steel." That such a definition is without the chemistry of the question no one will for a moment doubt; but anyone acquainted with the manufacture of iron knows full well that the two injurious metals in the iron ore are not touched by the Bessemer process, and that until the iron will stand the forge-hammer, in a lateral and cross operation, it cannot rank with the English iron at present in use.

The iron produced on Mr. Bessemer's plan may possibly be worked in a groove, longitudinally, and a bar may be presented; it may have a thread put upon it, and a nut applied. In this way it might be used as a support of a building, and so might cast iron, its brittleness would be the same with the slight advantage of having been a little purified from the carbon which was found in the ore, but the sulphur and phosphorus are still there, and the earthy particles which the common process would have worked out, remain untouched, and consequently the danger of such an experiment would soon arouse the fears and inference of those whose business is the preservation of the lives and the property of the people. The same argument is applicable to iron used for engineering purposes—to rails, axles, and springs. In reference to the manufacture of tools and cutlery, there is a still more formidable obstacle to be encountered. It is well known that competition has induced the manufacturers to employ every possible means to cheapen their productions, and that the spurious have given an advantage in price, and taken the place of the real, there is plenty of proof. In no branch of the Sheffield trade is that more apparent than in the fork business. Forty years ago that article was generally made of steel forged

with the hammer, and though the common British iron would serve the purpose, if it were sufficiently sound, yet the casting of forks in sand and the application of what is called "run steel," has now almost entirely destroyed the forged fork business: but is that an improvement? Cheapest is unquestionably attained, but Wrought, which should grace the table of men of means, is now the cast iron which will break with a very slight pressure, and which will turn black when they are used, but so long as they are dry in the cases of the manufacturer they would deceive the most skilful examination. Should any one be over critical on such a statement, it is just to allow that respectable manufacturers never sell the cast fork for the steel one, but the extent to which the substitution of the one for the other has, within the last twenty years, reduced the steel fork making is somewhere about 75 per cent. I could suppose the gentleman who signs himself "A Chemist," with an operation in this article. He thinks he has found a perfect victory over my observation that common cast iron may be allowed to cool in the sand, and will become tough in consequence; but let them forks be what they call "softened," and I can show him how to put them under the operation of the hammer until their appearance of being cast is almost entirely removed, but when they are cooled they are as brittle and as worthless as ever: the hammering may have changed their appearance a little, but it cannot be so far practised as to improve the quality of the article, in fact, nothing short of the puddling, rolling, or tilting, can secure good, malleable and serviceable iron; and only such material is worth the time and trouble of converting, and its necessary concomitants. In the scissor trade the "cast metal" and "run steel" has long been in use, and has answered better than in forks and table-knives. The reason is, the former are not brought into contact, with grease and hot water as the latter necessarily must be, which has the effect of instantaneously destroying that appearance which they may have had imparted to them by the skilled workman. If used for fine work, such as ladies generally perform, the spurious will long maintain their position with the real: the former will sooner rust, the edges will sooner become rough, and, should the manufacturer be careless enough to put his name upon them, he will be in a fair way for sacrificing his reputation—supposing him to have any. This description of material, which must bear some striking resemblance to that which is introduced by the Bessemer process, has not been applied to tools which require a strong, sharp, or fine edge—to files or to rasps. The reason is self-evident from the observations already made. There is no fibre, without which such material is useless in that kind of manufacture; and there are other defects which will be shortly explained. From recent accounts, both chemical and experimental, it does not simply appear that "the Bessemer patent may be a failure," but that it is an almost universally established fact that it will not accomplish any of those great purposes which Mr. Bessemer intended, and the advocates of his system—some of them most ignorantly—affirmed. Is the consequence to be oblivion and disappointment; a renewed application on the part of the discoverer, and a further outlay at Baxter House; the investment of money and brains in a fruitless speculation? The confession of our "Chemist," who performed wonders when he "notched and hammered" a piece of "Bessemer iron when it was hot," a furnace-boy would laugh at the assertion, and any person who may be disposed for the trial may note and hammer common cast-iron when in that state with the same degree of success.

It was not the object of the paper in *Zet's Magazine* of Jan., to denounce the patent as useless, but to prove the dangerous consequences which attend its application to springs, rails, anchors, and beams, or supporters of buildings: at the same time it was briefly shown that the Bessemer iron might be used in many departments of manufacture; and possibly the best friend to the system which seems daily to be exploding or passing into disrepute is the man who can show some plan in which the patent may be of use in manufacture. The cast metal and the "run steel," used in cutlery, might be improved by the process. Manufacturers do not like to talk about these productions; they are the secrets of trade in a certain sense. If competition compels them to resort to this substitution; if the markets in America demand a supply at a rate which renders the genuine forged article impossible, and the system of cheapness is considered the triumph of commerce—why not employ the advantages which the patent might secure, and make the bad better at a cost which would be nothing worth taking into calculation; the little extra in the cost would very likely be saved by the manufacturer having less expense in the process of finishing. It may be further observed, that stoves, bars, and other ornamental work in iron might be much improved by the Bessemer process. Its not having the fibre so necessary for malleable and tough iron certainly would be an advantage in this respect; it would have a clearer surface and would admit of a higher polish.

It is very surprising to find the *Engineer* countenancing a cheaper iron or steel, when it is well known that for engineering purposes the best steel, however costly, is always the cheapest, the workmanship being so expensive, and the results being so disastrous which flow from broken machinery. These gentlemen will possibly allow me to tell them that their continental competitors know what they should have from us for engineering purposes, and I am not disposed to conceal from them the component parts of steel forwarded to several parts of Prussia, Holland, and numerous German States: it consists of GL and KB, superior foreign iron. The greatest care was employed in its manufacture; it was the produce of the first rounds in melting, well examined and carefully tilted, and even this would sometimes be found defective when brought to the proper test; indeed, there is not a finer branch of art than the production of refined or superior cast-steel; it is a pity more scientific knowledge is not imparted to those who are engaged in the operation. But when science, on the Bessemer plan, produces cast-steel, then we shall find gold in flint-stone and produce diamonds from granite. Had Mr. Bessemer succeeded in producing a good iron on the plan he proposed no man could have conferred a greater boon on the commercial world. No invention would have been introduced at such a premium; iron was advancing in price, and the demand was increasing—but who could expect impossibilities from either Mr. Bessemer or his friends. They have done what they could, and will be entitled to the praise of patriots and disinterested lovers of progress and discovery; but these gentlemen who sign themselves as "chemists" must not beulae practical people, nor should their rage for novelty be allowed to introduce danger and confusion. We are well guarded by ironmasters not to be imposed upon by visions and fallacies: we may live in artificial times; but we live in an "iron age," when reality must triumph over fancy, and facts be acknowledged superior to any of the nonsense of superficial chemists. We have at present English iron wonderfully improved; it may be that the cost is increased, but the quality is superior. We have other British iron which is bad enough—no worse would be serviceable at all. To mention marks would be both invidious and impolitic; but we must never consent to take from Mr. Bessemer, or anyone else, a worse article than we have at present in use. As the new process professes to make steel, no better proof of its efficiency could be given than attempting to make what is called "steel" without requiring any blast by bellows or cylinders, or other wise." This is an important distinction, and one which, probably, will serve to account for the fact that no opposition was ever offered by Mr. Bessemer to my father; and that Cort's process gained universal approbation, while the other was abandoned in 1789.

I have also other reasons for stating that the blowing up of a blast, through fires immediately connected with, and adjacent to, the molten iron was a detrimental and erroneous practice. Then, again, Sir, it must be recollect that the lump of iron taken from the furnace was to be worked by Mr. Onions under forge hammers only; whereas, by my father's method, it was to be passed through the grooved rollers, by which means the scoria, &c., was got rid of far more effectually than by hammering only. I am aware that the grooved rollers were a distinct invention; but what I wish to be understood is, that Mr. Onions' invention, as it stood, if repented by a person twenty times over, would never have brought fame to himself or riches to his country. The truth is, my father has the sole claim to the merit of having made and developed a set of improvements in the iron manufacture, which, by their combined use, and by the practical skill and the liberal capital which he brought to bear upon them, rescued the iron trade of Great Britain from almost total extinction, and raised it far beyond that of all the rest of the world, combined, results which have excited the admiration of the nation, and obtained from the Press of this country a more spontaneous and general expression of feeling, than the claims of any other inventor who has ever elicited.—*Fleet-street, March 18.*

RICHARD CORN.

## FIRE INSURANCE—OPPRESSIVE GOVERNMENT TAX.

SIR.—About a year since, there was a great excitement caused by the establishment of a branch office in London, for enabling the British public to effect insurances against fire in a Paris company, whereby they would have been enabled to effect a saving of 50 per cent. in the annual premium, in consequence of there being no Government tax in France. In England the premium upon an ordinary risk is about 6*s.* per cent. per annum, of which 3*s.* goes to the Government, which is certainly a tax of which the people of England might easily rid themselves. Upon the establishment of La France Insurance Company in London, the Chancellor of the Exchequer was greatly alarmed, and immediately announced a bill for preventing any policies being undertaken in England without the payment of the Government duty. At this period it was clearly shown, in the columns of your Journal, that although, in the past ten years, the increase of property had been enormous, the increase in the amount insured had been insignificant; the total amount of duty received varying only, in the ten years, from 983,000*l.* to 1,306,000*l.*; and, deducting the leaseholds, &c., which, by the

ance companies and to the insurers; yet, from nothing more having been heard of the matter since Le France Company ceased active operations, I suppose it must be presumed that no further measures have been taken for obtaining the reduction of the duty; and I would, therefore, call upon those interested to arouse themselves, and exert to relieve us from the tax upon fire-insurance, which is now a crying evil, or they will find that some enterprising French company will take a large amount of risks, which would otherwise be insured in English offices.

MERCATOR.

#### THE CYMMER COLLIERY EXPLOSION.

Sir.—Will you, in common fairness to Mr. Evans, the Government Inspector of Coal Mines for this district, allow me to correct some statements which you have made in your leading article of last week on the Cymmer Colliery trial. In the first place, although you are correct in stating that Mr. Evans's appointment took place in the month of November last, allow me to say that the district was not given up by Mr. Mackworth until Jan. 1, so that Mr. Evans had only been in office for a little more than six months before the explosion at the Cymmer Colliery took place, instead of eight months, as you state.—2. Instead of the Cymmer Colliery being, as you state, "within four or five miles of the Inspector's residence," it is nearly eighteen miles distant from that place, and that, too, over a most difficult road to travel.—3. So far from the Cymmer Colliery being "well known to be a fiery mine," as you assert, it was always, up to the time of the explosion, considered to be peculiarly free from fire-damp. The very fact of the air having to travel in one continuous course for nearly six miles through airways, a furnace, and up-cast shaft, which were at several points only 7 to 8 ft. apart, is a complete contradiction to such a supposition, especially when it is taken in connection with the significant fact that throughout the whole of the mine, and for nine long years, the men had almost invariably worked with open lights. Had the colliery been a fiery one, such a state of things could not have existed for nine days. The evidence of Mr. Beddington, Mr. Daniel Thomas, and others, at the inquest, went to prove that the mine was not fiery, but badly managed.—4. Your observation, that the rules sanctioned by Mr. Evans were "totally destitute of the necessary provisions to be observed in very collieries," loses all its force if I have succeeded in showing that the Cymmer Colliery could not be ranked with that class of pits. I regret that these gratuitous assertions respecting the rules sanctioned by Mr. Evans should be so often repeated in your valuable Journal, without the least attempt at proof. Had the rules in force been attended to, this accident would not have taken place. Indeed, apart from the special rules, the first general rule provided by the Colliery Inspection Act, if attended to, would have rendered such an explosion impossible. That rule requires that "an adequate amount of ventilation shall be constantly produced at all collieries to dilute and render harmless noxious gases, to such an extent as that the working places of the pits and levels of such collieries shall, under ordinary circumstances, be in a fit state for working." Now, with the diminutive area of the airways, furnace, and up-cast shaft, it was impossible to supply a sufficient quantity of air to carry off the fire-damp which had in small quantities been accumulating, and gradually impregnating the stagnant atmosphere, until, for days before the fatal accident, the "cap" was to be seen on the candle, most surely indicating an inadequate amount of ventilation, and the consequent daily increase of danger. The almost entire neglect of the furnace on the day and night previous to the accident, completed the explosive mixture, and prepared the mine for the catastrophe which followed.

Now, let it be understood that the airways, furnace, and up-cast shaft, had been constructed under the inspection of Mr. Mackworth, and not Mr. Evans, and, consequently, the whole blame of this part of the business is due to the former gentleman, and not to the present inspector. I am at a loss to know why you should screen him, and attack Mr. Evans. As you have given some rather strange remarks of Baron Watson's with reference to Mr. Evans's remarks, which were afterwards withdrawn by that new and eccentric judge, allow me to quote from the same authority that at Lund Hill, which has indeed thrown a nation into deep lamentation and woe.

March 14.

THOMAS STEPHENSON.

P.S.—Allow me to call special attention to the following report of the last Parliamentary Committee on Accidents in Coal Mines, which was published in the Supplement of the *Mining Journal*, on July 8, 1854. It may not be known to most readers of your excellent Journal that I was in correspondence with the said Committee during its sittings, forwarded them several papers on colliery accidents, and, by desire of the Chairman, Mr. E. J. Hutchins, M.P., I also forwarded to him a plan, showing the proper distribution of the air by separate distinct winds through mines, as the only rational thing ever likely to lessen and prevent fatal colliery explosions. On June 4, 1853, the Chairman, Mr. Hutchins, wrote me, and among other things said, "I agree in all that you have written; I think all your suggestions are very valuable." The said Committee then declared—"Having well weighed the evidence which has been published, your committee are of opinion that imperfect ventilation is the cause of the numerous accidents from fire-damp in this country, and that an abundant supply of pure air, properly distributed, must be considered as the great and effectual means of preventing explosions, and the consequent sacrifice of human life."

#### TRAMROADS IN NEW COUNTRIES.

The best description of road for the transit of passengers and merchandise in thinly-populated countries, or in districts where the amount of travelling is not deemed sufficient to justify the construction of railways and the use of locomotive engines, is a question calling for the most careful consideration; and we, therefore, subjoin some data, which will, no doubt, prove interesting. The more important points involved are the cost of construction in the first instance, and the expense of working and maintenance afterwards. In comparing the tramroad system with common roads, the far greater facilities offered, both by the increased amount of merchandise and passengers carried, and the much shorter time required in the transit, with the application of the same animal power, by the tramway, is apparent, that we presume no question would be raised upon their relative merits, but the comparison with ordinary railways has been more closely questioned. The experience of a railway 26 miles in length, and in a prosperous colony, where 10,000 square miles of surface require lines of communication, and the population scattered over it is less than 100,000, or, in other words, where there are about 10 persons to the square mile, is taken as an instance of the inutility of constructing expensive railways with locomotives. In this case, although the published returns showed a balance in favour of traffic of upwards of 325*l.*, it was found upon investigation that no charge or provision was made for wear and replacement of engines, and other rolling stock. There were three engines then on the line, which cost 12,700*l.*, and by adding the interest that had accumulated, their actual cost was taken at 4500*l.* each. English experience has established that 36,000 miles is the average work an engine will perform; therefore, if one engine were to do all the work upon the line, it would be worn out in a year and a half, thus showing 3000*l.* per annum for replacement of engines, casual repairs, renewal of boiler-tubes and fire bars, with maintenance of the rest of the rolling stock, would be a still greater source of expense, and which estimated at another 3000*l.*, would give 6000*l.* as the annual cost of rolling stock.

The number of persons travelling on the line referred to does not exceed 50 each way, which has been taken as the basis of calculations. The number of trains daily are two each way, which calculated at 4*s.* 6*d.* per mile for haulage (the actual cost), the daily amount of that item will be 23*s.* 18*d.* The cost of the engine (4500*l.*), divided by the miles run (36,000), gives 2*s.* 6*d.* per mile travelled, or for the daily work (104 miles) 1*s.* The annual cost of keeping the engine in repair (1600*l.*), divided over the working days of the year, gives very nearly 5*s.* per day, and these items, added to the interest on prime cost of at least two engines at 10 per cent., 900*l.* per annum, or 2*s.* 17*s.* 8*d.*, makes the daily cost of haulage 4*s.* 15*s.* 8*d.* Estimating the amount of revenue derived from the carriage of goods at one-half—the actual proportion being one-third—22*s.* 7*s.* 10*d.* is chargeable against passengers, which, divided by 200, the number travelling each day, gives 2*s.* 2*d.* as the cost of haulage for each passenger over the entire distance of 26 miles.

Instead of constructing more railways in the colony, as it is calculated that the population will be many generations before it will equal that of Scotland (92 to the square mile), it is proposed to lay down tramways with light long coaches, suitable for traction by one horse, and capable of accommodating 12 inside and 16 outside passengers; four each way would suffice for the above number of passengers; but to provide for occasional increase of numbers, and to afford greater accommodation by more frequent departures, calculations are based on six coaches daily each way. These coaches need not exceed 1 ton weight empty, when fully loaded 3 tons, while the medium load would be about 2 tons. Repeated experiments by the first engineers in England have established 8*1/2* lbs. as the power required to draw 1 ton on a level rail, and as the line is nearly level, the deviations from it being about the same either way, the force required to draw these coaches will vary between 17 and 25 lbs. The numberless experiments of Mr. Telford on the Holyhead and Liverpool turnpike roads determined the performance of horses drawing stage coaches at the rate of 10 miles per hour to be 42 lbs. each horse, consequently one horse with the proposed coaches would not be more than half loaded.

Short stages are considered preferable, making the horses work two of them daily. On this line there should be five—three intermediate, and those at the ends. Seven horses at each stage would be sufficient to work six each day. The first cost of these 35 horses, at 50*l.* each, would be 1850*l.* Allowing 5*s.* per day as the cost of each horse, including everything—the actual cost would be little over 3*s.* 6*d.*—there would be an expenditure of 8*s.* 15*s.* ten horses must be renewed every year, 500*l.*; add interest on original stock, 185*l.*—685*l.*, or 2*s.* 4*d.* per day, making a total of 10*s.* 19*s.* per day, being a little more than 8*1/2* each passenger for the 26 miles, or less than one-third of that for locomotive traction. Of course, where the population is sufficiently dense, or where the goods traffic is of an extent to make locomotive traction remunerative, it would be infinitely superior; but there are many districts in which the construction of railways for locomotive traction would entail loss upon the shareholders.

A practical intelligent observer will have seen long ago that a few yards of brattice boards neglected, a trap-door being left open, unscrewing the lamp to off, &c., have generally been found suitable and efficient stopgaps to bear away the guilt of colliery proprietors and managers. The day of retribution will come. Then, immediately after an explosion, the public is given to understand, almost by every newspaper throughout England, &c., that the mine where the calamity falls was considered in a most effi-

cient state of ventilation—indeed, "a model colliery"—aye, and no one is generally to blame but some unfortunate miner, who has by the calamity been ushered into the unseen world. A greater fallacy could not be published; the very reverse, in most cases, is the real fact. Then the inexcusable mischief of such statement, operating as it does in the prevention of a remedy! I know that editors of newspapers are not a class of men to be a party in publishing anything which might be detrimental to the poor miner, but their want of practical knowledge may, and I fear sometimes does, lead them into some mistakes, especially on this difficult question.

I tell the Government, colliery proprietors, managers of collieries, &c., that so long as the present unscientific method of ventilating coal mines exists, together with the present mode of peeling mines, even long will it be a waste of public money to have Inspectors of Mines. Yet, though their numbers were increased tenfold, and the general and special rates of colliery fortyfold, even then accidents, frequent, fearful, and appalling, must and will occur, and in the nature of things cannot be prevented.

Tell me of a coal mine, known to generate fire-damp, and that all the air employed to ventilate it is made, after it has done its work, to pass into an 8 or 9 feet road, and then return directly over the furnace, and I will tell you, fearless of contradiction, that as sure as buds and blossoms are the foretellers of fruit, even so sure is such a method of ventilating mines the harbinger of death to the miners employed therein. "What of earth use is a safety-lamp in a coal mine ventilated as above described, although that safety-lamp should be most complete and perfect in all its arrangements, and though it were never tampered with by a miner? All such excellent arrangements and care would not, and could not, prevent the appalling catastrophes periodically occurring in the coal mines of this country.

See Mr. Seller's manly and frank confession. All honour to such a man! "I should be afraid (says he) of the gas igniting at the furnace." Just so. If the gas or fire-lamp will explode at a safety-lamp, or a naked candle, in only one part of a mine, what may we not expect when all the return air of such mine, charged with gas or fire-damp, is made to pass directly over a burning fire.

Can there be any wonder at the miners in that neighbourhood having signified their intention of leaving their employ, feeling as they do, unquestionably, their insecurity, and believing their lives to be in constant eminent jeopardy. Let us now hope and believe that, inasmuch as this *body-destroying* evil has now been made known to the public and Government, forthwith a remedy, plain, easy, and effectual, will be adopted and put into operation in all the mines of this country with as little delay as possible. What, then, is the remedy proposed, as most certain in its application, to lessen and prevent colliery explosions? That remedy I have urged since 1854. I have repeatedly pressed it upon several Secretaries of State, Parliamentary Committees of Lords and Commons, and particularly and personally upon the late high-minded, honoured, and eminent Sir Henry De la Beche, in an interview I had with him in his room at the Museum of Practical Geology, Jermyn-street, London, on Tuesday, Nov. 8, 1853. Never shall I forget the kindness and sympathy expressed by that distinguished man on behalf of the mining population of this kingdom. He saw the plan I described, a plain, sensible, practical remedy. Would to God he had lived! his very sudden death, just at the time when the present Colliery Act was contemplated, was a great national loss. Here, then, is the remedy to prevent future catastrophes in coal mines. Throw plenty of air into a mine—say, from 50,000 to 100,000 cubic feet per minute. I stay not to argue as to its mode of creation; I care not, whether by bellows, steam-jet, or furnace, only let it be done and maintained, as I affirm it can. Then, let that air be properly split, or divided, into *separate distinct winds*, and distributed in this manner throughout every department of a mine. Then, let all that air, after doing its work of ventilation, be directed to pass, as it should do, and as it can be made to do, direct from the men and horses to the up-cast shaft, but in no case, and on no account, must it be allowed to ever come in contact with a fire, either in the shape of a candle or furnace. I presume, of course, that all colliery proprietors will not lose sight of their duty in directing and providing proper sized up and down-cast shafts.

I will now add, in conclusion, that if these precautions are taken they will be followed by great positive pecuniary gain to all colliery owners, who generally suffer severely by explosions, and depend upon it we shall hear no more of such explosions as that at Lund Hill, which has indeed thrown a nation into deep lamentation and woe.

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## Mining Correspondence.

## BRITISH MINES.

**ABBEY CONSOLS.**—E. Williams: The shaft is sinking speedily in a capital course of ore. The rise in the eastern part of the mine, 6 fms. above adit, we have crossed out in the south part of the lode for 8 ft., in a fine course of ore; the end of the cross-cut still continues in good ore. The slopes yield from 10 to 12 cwt. per fm. The return of frost has again retarded the dressing.

**ALFRED CONSOLS.**—M. White, T. Treleuse, T. Hosking, March 16: There is no change to notice in the western part of the mine since last report. In driving the 120, south of Davey's engine-shaft, we have intersected the north lode, which is 6 ft. wide, yielding good stones of copper ore, looking very promising. The lode in the 120, east of this shaft, is worth for copper ore 50/- per fm. We expect this rise will, in the course of this week, be communicated with the winze. The lode in the 90, east of this shaft, is worth for copper ore from 30/- to 40/- per fm. The rise over the 90, east of this shaft, is communicated with the winze sink below the 80, and this ground is set to six men, at 1s. 3d. in fm. All the other parts of the mine are just as for some time past.

**BALLYMONEE.**—W. Barkla, March 14: In the 35, driving south, there is no change to notice during the week; our progress is highly satisfactory, and the ground still looks promising for driving. Driven at last report 5 fms. 4 ft. 9 in., since 5 ft., together 4 fms. 3 ft. 9 in. In the 35, driving north, in consequence of so much water coming out of the end, and the ground harder than it has been, makes our progress rather slow, but the men are all working with spirit. Driven at last report 3 fms. 3 ft., since 3 ft. 6 in., together 4 fms. 0 ft. 6 in. In consequence of so much rain this week, it has made against us in carriage of stone, but, if the weather permits, I hope we shall commence to build on Monday.

**BALLYVIRGIN.**—R. W. Smith, March 11: There is nothing as yet in the east cross-cut, and the ground continues hard for driving; the water issuing out of the end is very much coloured; I have had some of it analysed, and it was found to contain copper; this end is set to drive 3 feet stent, at 12/- per fm. The lode in the south end is small and poor, but the ground round it is kindly. I have put the men to cross-cut further west, to see if the lode is making larger or richer in the bottom. In driving from the old slope, to hole into the shaft for ventilation, the lode is rich for copper, and will yield 50 cwt. of lead and 25 cwt. of copper ore to a fathom.

**BEDFORD CONSOLS.**—J. Hodge, March 19: The lode in the shallow adit is at present disordered by several veins of spar crossing it. The ground, however, is favourable for driving, and we anticipate a change for the better in a small distance further driving.—Old Workings: We are still clearing up here with three men, as far as the nature of the work will allow, and have not reached the bottom; down now between 5 and 6 fms.

**BEDFORD UNITED.**—J. Phillips, March 19: The lode in the winze sinking below the 115 east is a little improved within the past week, being now 4 ft. wide, yielding 6 tons of good-quality ore per fm. All other parts of the mine are without alteration.

**BOILING WELL.**—J. Delbridge, March 14: In the 60 the lode is 12 in. wide, not to value. In the 50 cross-cut north and south no lode. In the 40 the lode is 2½ feet wide, blende, ore, and lead. In the 30 fathom level the lode is 3 feet wide, blende, ore, and lead. In the 30 rise above this level the lode is 9 in. wide, yielding from 6 to 7 cwt. of lead per fm. In the 30 rise, on south lode, the lode is 3 ft. wide, lead, blende, and ore—opening tribute ground. In the 20, east of King's, the lode is 9 in. wide, good blende, ore, yielding ½ ton per fm. The 20 west is looking promising, opening good tribute ground. In the 10 the lode is 9 in. wide, solid lead and copper ore. In the 20, east of Austin's, the lode is 14 in. wide, lead, blende, and copper ore. In the 30 cross-cut north nothing met with as yet. The mine bids fair for the next two months equal a fine course of copper ore in the 20 back, east of King's.

**BOLENOWE.**—W. Roberts, March 17: The following bargains were set on Saturday last:—The 50 to drive east by four men and two boys, at 31. 1s. per fm.; the lode is 2 ft. wide, composed of soft spar and flookan. The 40 to drive west by four men, at 71. per fm.; the lode is 1 ft. wide. The 20 fm. level cross-cut south by four men, at 71. per fm.

**BULLER AND BASSET UNITED.**—G. Reynolds, March 14: The lode in the engine-shaft is still large, being 4 ft. wide, composed of gossan and spar, mixed throughout with mundic, and sprigged with copper ore. The men are working hard, in order to get this shaft down to the 50 as soon as possible.

**G. Reynolds, March 18:** The men are still sinking the engine-shaft on a large and promising lode, 4 feet wide, producing mundic, and sprigged with copper ore. We are making every effort to sink this shaft to the 50 as soon as possible, where we purpose driving east, towards the great cross-course, where I should say that most likely this lode will be a productive one at that one particular point.

**BULLER AND BERTHA.**—John Sims, March 17: I went over Buller and Bertha's lode yesterday and find the captain has laid open six lodes from 1 to 4 ft. wide, three of which are very promising and likely to be productive at no great depth: the present operations are on Lady Bertha's lode; the shaft on the course of this lode is nearly full of water. They are now bringing a shallow level to take off the surface water, after which no doubt they will be able to prove the lode down 20 to 25 fms. with a whim; and as the captain fully expects to have ore in this shaft, he is carrying it large enough to put in pumps and fix the steam-engine here. As far as my judgment goes, in mining operations I cannot see anything can be done better than has been done, and is now being done by Capt. Hamby.

**BUTTERDON.**—T. Grenfell, March 18: We are still driving north by the side of stones of ore to-day, that shall be reported on more fully next week.

**BWLCH CONSOLS.**—Capt. Northey: The 50 driving west is worth 10 st. of lead ore per fm. The winze to sink in the bottom of the 40 has no lead to value, at present. No. 3 stope, in the back of the 40, is worth 4 cwt. per fm. No. 5, 6 cwt. The stope in the back of the 40, east of shaft, will be good for working, and it is believed it will shortly improve, as the lode looks kindly. Eight extra miners have been employed this month, to put in tramroads, and to make preparations for sinking the shaft under the 50, which will be completed in a fortnight, and then they will begin to sink. He is preparing to erect a new wheel to work the trunks and boulders, which will give at least 200 per cent. in a year.

**BWLCH-STELLAN.**—J. Williams: The men are getting on very well with sinking the engine-shaft, and the lode in it is of the finest gossan for the size of the shaft. The engine works exceedingly well.

**CAMBORNE CONSOLS.**—W. Roberts, March 17: No alteration to notice in the tutwork bargains since last reported. We intend to sample on the 25th inst. about 30 tons of ore.

**CARADON CONSOLS.**—W. Rich, March 19: The north lode in the 35 east is without any material alteration, it appears to be getting more concentrated as the level is being extended eastward; this lode in the present end of the same level, driving west, is now 2 ft. wide, composed of quartz, gossan, &c., but without ore; the ground is moderate for driving, and the lode, which is very porous, lets out a large stream of water. We have now completely drained the lode in the shallow adit, where it is some 12 fms. south of the old flat-rod shaft, which goes to prove that this and the north lode in the 38 west produces a little ore, but not enough to value. The lode in the boundary-shaft produces occasional good stones of ore with regular and well-defined walls and going nearly perpendicular.

**CARNEWAS.**—Geo. Reynolds, March 18: I have now returned from this mine; while there I again examined the copper lode, and the more I examined it the better I liked it, but as we have driven so far towards the intersection on the lead lode I thought it the best plan to force on the end with all speed to cut the copper lode, therefore we have put six men instead of four, in order to push on the end as fast as possible; the lode in the end is at present from 2 to 3 feet wide, white iron and mundic, sprigged with lead throughout. The tramroad is completed as far as the present end, so that the men will have nothing to hinder them from driving with all speed; the ground is much softer than it has been, present price 31. per fm.

**CARVANNALL.**—W. Roberts, March 17: The 115 fm. level west produces about ½ ton of ore per fm., lode 2 ft. wide. The other levels are much as last reported.

**COLACOMBE.**—S. Mitchell, March 17: During the last week the 72, west of Morris's shaft, has been driven 4 ft., the lode is composed of quartz, capel, mundic, and copper ore. The rise in the back of the 62, west of the western shaft, is holed to the winze in the bottom of the 50. The driving of the 62, west of the western shaft, was resumed yesterday, lode worth about 1 ton of good ore per fm. The rise in the back of the 50, east of Morris's shaft, has been put up 9 ft., lode worth 1 ton of ore per fm. for the length of the rise (8 feet). The rise in the back of the 49 has been put up 9 ft. lode still worth about 1 ton of ore per fm. The pitches continue to look well. About 130 tons of ore is already taken to (quarry) Morwellham, and we have from 30 to 40 tons more ready on the mine, which will be sent down and divided by the latter part of this week for our next sampling.

**CUBERT UNITED.**—J. Trewin, March 14: The sinking of the engine-shaft is suspended. The lode in the 75, south of the sump-winze, is divided into two branches, the western one is 10 in. wide, composed of quartz, prian, &c., with occasional spots of lead. The winze in the bottom of this level, south from the engine-shaft, is stopped. The slopes north of the said shaft, in the back of the 75, are improved, and worth at present 8 cwt. of lead per fm. The slopes south are producing 4½ cwt. of lead per fm. The lode in the 66, south of Tawsey's shaft, is for the present small, and poor for lead. The slopes in the back of this level, south of the engine-shaft, are much the same as last reported, worth 5 cwt. of lead per fm. The slopes north of the shaft being poor are suspended. We sampled on Tuesday, March 16, 23 tons of good lead ore.

**CWM SEBON.**—J. Boundy, March 14: The shaftmen are engaged in stowing the roof of the level west of the engine-shaft, to put in a penthouse, and to bring down the whim-kibble into the pit. In No. 1 stope, east of engine-shaft no lode has been taken down during the week, in consequence of a pile of stuff which has been broken in upon the lode; this we shall clear out in a few days, and take down the lode. The piece of lode standing in this stope is 5 fms. long by 3 ft. high. All the other slopes are much the same as last reported. The tribute pitches are looking tolerably well: the men are working with spirit, and I believe earning fair wages.

**DAREN.**—J. Humphreys: Francis's level is in good ore. The tribute bargains are less productive than usual, and the men have given up two of them. The crusher is being repaired, the driving gear having become worn. Our best prospect is in Francis's level, which is going in good ground, which, we hope, will reach the old mine.

**DEVON AND CORNWALL UNITED.**—T. Neill, March 17: The lode in Bastard's end is 4 feet wide, worth 2 tons of ore per fm. The lode in the rise in the back of this level is 7 ft. wide, and for the length of rise is worth 8 tons of ore per fm. The stope west of rise is improved; lode is 7 ft. wide, worth 1 ton per fm., with 6 ft. in length. At Midway level, the lode in the end is 3 ft. wide, worth 1 ton per fm., with 6 ft. in length. The stope east and under the new shaft is worth 5 tons of good ore per fm. The lode in No. 2, winze is 4 ft. wide, worth 6 tons of ore per fm. The new shaft is going on all right, and I have no doubt we shall hold it some time this month, after which we shall have good ventilation.

**DEVON AND COURtenay.**—T. Bawden, March 17: The lode in the pitch in back of the 90 is worth 2½ per fm. The lode in the pitch on south branch, back of the 90, is worth 10/- per fm. The lode in the pitch in bottom of the 90 is worth 25/- per fm. From the present appearance of the mine, we shall have at our next two-monthly sampling the largest quantity of ores ever sampled at one time from it.

**DEVON BURRA BURRA.**—J. Lord, March 19: The small portion of lode taken down during the past week has made little or no alteration from that of my last report. We have not yet seen the size of the lode to ascertain its value per fathom. We are still driving north and south, through an exceedingly fine stratum of ground, and very congenial for mineral.

**DEVON WHEAL BULLER.**—W. Neill, March 19: The lode in the west end of the 44 fm. level is improving; at present it is 2 ft. wide, producing stones of copper ore throughout. No alteration in any other part of the mine.

**DOLWEN.**—F. Evans, March 13: The adit level is driving west, by four men, at 7½ per fathom. The lode looks rather better than I have seen it for some time, being larger, and with more spar in it; there is also a change in the strata, which is most favourable. I will write you more particulars of the shaft in a day or two.

**EAST CARN BREA.**—T. Gianville, March 15: Since commencing operations we have put the engine to work, and drawn out the water. I find the shaft down 12 fathoms below the adit level, and the lode taken away about 30 fms. in length. East and west of the shaft we shall begin to sink the early part of next week, when I shall be able to speak of its value. In the north part of the set we have opened an adit, and find a level driven 100 fathoms on a lode about 15 in. wide, composed of gossan, black ore, and green carbonate of copper, and has every appearance of producing a large quantity of ore in depth.

**EAST WHEAL FALMOUTH.**—W. Burrows, March 18: The 20 north, on west lode, is producing from 7 to 8 cwt. of lead ore per fm., and letting out water freely. I expect to commence sinking a winze from the 10 to the 20, which will come down north of our present end, next week. The east lode is much the same as when last reported on. The 10 north end is poor at present. The stope are without any material change requiring notice since last week. The east and west lode is producing fair work for tin.

**EAST WHEAL ROBERT.**—J. Colom: The adit end driving east, and the adit and driving west, are both improved in appearance, and are looking very favourable for ore.

**EAST WHEAL ROSE.**—J. Evans, March 14: We have no alteration in our prospects in any part of the mine for the better. The 40 south, where there is a tributary lode, is not driving. The men are engaged rising against Robert's shaft, directly behind the end, which will be holed in a day or two, when the men will commence driving the end. Our sampling, yesterday, for February is 123 tons lead ore.

**EAST WHEAL RUSSELL.**—J. Goldsworthy, March 15: There is but little change in the lode in the 66, since last reported; the lode is a little more disordered with elvan, and not carrying quite as much capel.

**FARN MILL.**—J. P. Nicholls, March 17: We have set the engine-shaft to sink under the 72 by six men, for the month, at 11. 10s. per fm. The 72 south, on the east lode, to drive by four men, 4 fms. stent, at 21. 5s. per fm.; this end is producing a small quantity of saving work, but not rich. The 72 north, on east lode, to drive by two men, 2 fms. stent, at 31. 5s. per fm.; this end is producing ½ ton of lead per fm. The stope in back of the 72 north, on east lode, to stop for the month by two men, at 22. per fm.; these stope are at present worth 9 cwt. of lead ore per fathom. The 72 north, on west lode, to drive by four men, 4 fms. stent, at 21. 5s. per fm.; this end is at present worth ¾ to 1 ton of lead per fm. The 72 south, on west lode, to drive by four men, 3 fms. stent, at 11. 16s. per fm.; this end is at present worth 8 cwt. of fm. Dunn's stope, back of the 72, on west lode, to stop for the month, by six men, at 12s. per fm.; these stope are worth 14 cwt. of lead ore per fathom. Russo's stope, back of the 72, on west lode, to stop by four men, for the month, at 14s. per fm.; these stope are at present worth 6 cwt. of lead per fm. Chamberly's stope, back of the 72, on No. 1 branch, to be stopped by two men, for the month, at 13s. per fm.; these stope are worth from 8 to 10 cwt. of lead per fm. The 60 south, on east lode, is suspended for a short time, and the men from the end put to sink a winze from the 60 to the 72, which they have taken to sink, by four men, at 21. 5s. per fm. Key's stope, back of the 60, on east lode, to stop by two men, for the month, at 11. 8s. per fm.; these stope are worth 7 cwt. of lead per fm. Wedlock's stope, back of the 60, on east lode, to stop by two men, at 26s. per fm.; these stope are worth 2 cwt. of lead per fm. The 60 north, on west lode, to drive by two men, for the month, at 11. 8s. per fm.; the lode in this end is very promising, and letting out a great quantity of water, but does not contain sufficient lead to value. In conclusion, I beg to state the ends and different stope are working better than they have been for some time past.

**GAWTON.**—J. Gill, March 18: At the engine-shaft we are making fair progress in sinking. The ground in the 36 cross-cut still continues easy for driving, and water oozing from every part of the end: I think this a good indication of the lode being still before us. In the end going east, in this level, I see no change on the lode of importance. In the 36 end west there is a little improvement since last reported.

**GELLIRHEIRON.**—J. Jones: The ground in the rise is harder than it has been, with spots of ore in it, and letting out more water. The rise is up between 13 and 14 fms. above the back of Francis's level. The new shafts will be put on to the rollers for-morrow, when they will be able to crush more ore.

**GREAT HEWAS UNITED.**—John Webb, March 18: Western Mine: In the 86, we have driving west by the side of the lode, the last piece taken down was good work still before us.

**GREAT HEWAS UNITED.**—John Webb, March 18: Western Mine: In the 86, we have driving west by the side of the lode, the last piece taken down was good work still before us.

**GREAT SOUTH TOLOUS.**—J. Daw, March 18: The lode in the 80, east of New Mine, is 2 ft. wide, producing ½ ton of copper ore per fm. In the 80 west level, little has been done. The men have been employed repairing the shaft. The lode in the 80 east is 1 foot wide, producing 1 ton of ore per fm. Other parts of the mine are without alteration since last reported.

**GREAT WEST SORTRIDGE.**—J. Richards, March 19: In the sinking of the engine-shaft good progress is being made. The cross-course alluded to in my last is through, under which the lode has improved, being composed of very fine capel, mundic, prian, and good stones of copper ore. In cutting into the lode south, in the 30 west, the lode is also showing improvement, and, so far as seen, is 3 ft. wide, containing capel, mundic, and a little copper ore. In the 30 east the cross-course is being cut through, to the east of which the lode is not yet seen.

**GREAT WHEAL BADDERN.**—John Jenkins, March 17: The new shaft, east of the lode, is 2 ft. wide, the south lode is 1 ft. wide, in the 76 we have driving west, by the side of the lode, the last piece taken down was good work still before us.

**GREAT WHEAL BADDERN.**—John Jenkins, March 17: The new shaft, east of the lode, is 2 ft. wide, the south lode is 1 ft. wide, in the 76 we have driving west, by the side of the lode, the last piece taken down was good work still before us.

**GREAT WHEAL FORTUNE.**—R. Pryor, J. Daniel, March 18: Harvey's engine-shaft is sunk 5 fms. 3 ft. below the 70; ground much improved. The cross-cut in this level is driven south 7 fms. The 70 is driven west of the cross-cut, on the main lode, 3 fms. 3 ft. 2 ft. wide; yielding 1 ton of good copper ore per fm. In the 20 end, east of Field's shaft, the lode is 2 ft. wide, yielding 1 ton of good copper ore per fm. In the 30 end, east of cross-cut, on Conqueror's lode, the lode is 4 feet wide, worth 5/- per fathom for tin. The 40 is extended east of cross-cut, on Richard's branch, 3 fms. 3 ft., and opening tribute ground. Carnical deep adit level is driven west of the new shaft 5 fathoms 6 fms. 5 ft. wide, and producing a little tin; the ground in this end is not so favourable for driving. In the western stope, in the back of this level, east of shaft, the lode is 5 ft. wide, and worth 20/- per fathom. In the middle stope the lode is 4 ft. wide, worth 16/- per fathom. We have taken the men from the eastern stope, in the 30 fms. 3 ft. east of the shaft, lode is 4 feet wide, worth 5/- per fathom for tin. The lode stripping down west of the eastern cross-cut, is from 6 to 7 ft. wide, worth 50/- per fm. We have communicated the rise in the back of the 160, on the flookan, with the 148, which will be a great benefit to both levels; we shall now drive this level west on the branches intersected in the cross-cut.

**GREAT WHEAL BADDERN.**—John Jenkins, March 17: The new shaft, east of the lode, is 2 ft. wide, the south lode is 1 ft. wide, in the 76





Wheat Bassett has sampled 559 tons of ore, and South Frances will probably sample about 300 tons, but there is a great deal of ore broken which they have not been able to raise.

At Great Dowgins, the new lode continues to look well. The lode in the shaft being sunk on the Woodhead lode is producing good work for tin, which is a new and an important object.

At Angarrack Consols, the lode in the end, east of the shaft, has considerably improved; it is large, and of the most kindly character, and, from appearance, there must be a deposit of ore either a little further east, or near in depth.

At Great Howas, the various ends are looking well. The stopes are generally improved. From 18 to 14 tons of black tin were sold yesterday.

The works for the engine purchased for South Cudra Mine are progressing satisfactorily, and the utmost exertion will be used to get it completed as soon as possible. The engine-shaft is being sunk with all despatch, the ground being beautiful killas, and is being sunk at 41 ft. per fm. About 30 tons of good ore are on the surface, in process of dressing for the next sampling.

Botalack is worth 100/- per fm. in the 160, and still continues very promising in Wheal Cock.

Cargill continues to improve, and open new ore ground every day.

The Nanteos and Penrhiew report this week is again exceedingly favourable. There is every prospect of the property being in an exceedingly profitable state in a very short time.

From Trelyon Consols, Capt. Richard James and John Trevor report that their prospects are most cheering, their machinery is in good working order, and the engine does the whole work, namely—pump all the water and wind, and stamp all the stuff required on the mine.

From Dwyngwyn Mines, Capt. Edward Davies reports that the dressing department has had plenty of stuff to work upon. During the few days that they were not drawing, in consequence of an accident to the machine, the dressers worked upon some waste, so that they were not idle, although they did not put so much ore into the bins. The machine has been repaired, and resumed drawing. They shipped by the *Yelver* more than reported, 6 tons; by *Dovey* packet, 20 tons; and have dressed about 23 tons—32 tons.

From Rhosyddol and Bacheddon Mines, Capt. E. Davies reports that the dressing department has been fully occupied, and on the whole, has had better weather than they might have expected. They have been changing the rollers of their mill, and making good some places that required repairing. They shipped by the *Yelver* more than reported, 4 tons; by *Dovey* packet, 18 tons; and have dressed about 21 tons—44 tons.

From Nant-y-Car Mines, Capt. Wm. Rogers reports that in the inside stopes the lode is again improving, and no doubt before the end of the present week it will be much better. The underground workings were never looking so prosperous. He has now ready for market 14 tons of white ore and 12 tons of blue; 14 tons are at Aberystwyth, 9 tons 15 cwt. at Royader, and 2 tons 5 cwt. on the mine—26 tons, and he hopes before the end of this week to have the 30 tons.

At Wheal Margaret, they have cut a splendid course of tin in the 80, east of William's shaft, on the Foul lode, worth from 30/- to 40/- per fm., and they have an end coming against it, 45 fm. off, worth 30/- per fm. It is anticipated that the next dividend will be 5/- per share.

At the Kinsington Mining Association meeting, on Thursday (Mr John Field, Chairman of the council, in the chair), the accounts, which are made up to include the receipts and disbursements in Germany to Dec. 31, 1856, in Germany, 9640 fm. 13 krs. (5020 fm. 4d.); in London, 11582 fm. 9s. 5d.; mine cost, 25,960 fm. 35 krs. (21652 fm. 1s. 1d.); stamps and dressing, 796 fm. 50 krs. (661 fm. 1d.); smelting works, 5048 fm. 40 krs. (5020 fm. 1s. 5d.); barytes mill, 1169 fm. 05 krs. (971 fm. 6d.); freight, discounts, exchanges, &c., 3410 fm. 32 krs. (2842 fm. 2d.); salaries, rent, legal charges, advertisements, travelling expenses, and sundries, in Germany, 5356 fm. 58 krs. (4611 fm. 8d. 4d.); ditto in London, 2848 fm. 18s. 5d.; new operations, buildings, plant, &c., in Germany, 8607 fm. 49 krs. (7172 fm. 8d. 4d.); drafts drawn from Germany upon London, 2440 fm.; making the total in Germany, 60,390 fm. 42 krs. (50321 fm. 2d. 4d.), and in London, 3383 fm. 7s. 10d. = 8915 fm. 19s.—Balance from last account, in Germany, 338 fm. 10 krs. (261 fm. 8d.); ditto in London, 3107 fm. 9s. 8d.; shares released, 5344; calls received, in Germany, 768 fm. (641); ditto in London, 2111 fm. 10s.; mining products sold, 23,438 fm. 05 krs. (1953 fm. 3s. 4d.); drafts drawn on London, 34,900 fm. 36 krs. (2998 fm. 7s. 8d.); leaving balance against the association, in Germany, 945 fm. 51 krs. (781 fm. 16s. 5d.), and in London, 937 fm. 5s. 2d. = 10162 fm. 7d. The loss upon the year's operations in Germany was 27,113 fm. 21 krs. (22594 fm. 7s. 4d.); and the total loss upon the operations of the company, in London and Germany together, during the period included in each account respectively, was 4984 fm. 16s. 1d. A call of 10s. per share was made. The accounts are very elaborate, and reflect great credit upon the accountants; and the reports upon the mines are favourable as to their future prospects.

The Lusitanian Mining Company (limited) have a report of the Palhal and Carvalhal Mines from Capt. T. Cheywin, dated Palhal, March 7.—PALHAL MINE: The ground in Taylor's engine-shaft, sinking below the 18, is as usual, and in about four weeks more shall be down to the 28 to commence cutting the plat in that level. The ground in the 13 cross-cut, driving south towards the Mill lode, is much harder than it was for driving through; the lode in the 18, driving west of Taylor's engine-shaft, is 3 ft. wide, worth 2 tons per fm.; the lode in the 18, driving east of Taylor's engine-shaft, is 4 ft. wide, composed of quartz and stones of copper ore, nothing to value. The lode in the stopes No. 1, in back of the 18, east of Taylor's engine-shaft, is 2 ft. wide, worth 1 ton per fm. The lode in the stopes No. 2, east of de Silva's winze, in back of same level, is 3 feet wide, worth 1 1/2 ton per fm. The lode in the stopes No. 3, west of Taylor's engine-shaft, in back of the 18, is 1 1/2 foot wide, worth 2 tons per fm. The lode in the stopes No. 4, west of Butler's winze, in back of same level, is 2 ft. wide, worth 1 1/2 ton per fm. The lode in Camo's winze, sinking below the 6, is 3/4 ft. wide, worth 1 ton per fm. The lode in the stopes No. 5, in back of the 6, west of Roys's winze, is 1 foot wide, worth 1 1/2 ton per fm. The lode in the stopes No. 6, east of Taylor's engine-shaft, in back of the 6, is 6 ft. wide, composed of quartz, with branches of copper ore running through it worth 1 ton per fm. The lode in the stopes No. 7, in back of the adit level, in the eastern hill, is 2 ft. wide, worth 1/2 ton per fm. We have resumed the driving of the adit level east in the eastern hill, which is 2 ft. wide, composed of flock—River Shaft: We have resumed the sinking of this shaft; the ground in it is still favourable for going through, and it continues as it we hope to get it down to the 18 early in April next, the water is much less, and we hope it will yet decrease as the 18 comes in under it. The lode in the 8, driving east of River shaft, is 3 ft. wide, 1 foot is flockers and the other 2 feet hard quartz, with stones of ore on the north wall of it.—Mill Lode: The lode in the stopes in bottom of the adit level, east of Antonio's winze, is 8 in. wide, worth 1 ton per fm.—House Lode: The lode in back of the adit level, east of the old shaft, is 2 ft. wide, composed of silex and quartz, with some small branches of black ore in it. Our surface work is going on satisfactorily.—CARVALHAL: The lode in the adit level, driving east on the G lode, is 1 1/2 ft. wide, composed of manganite and soft quartz, all of a loose nature, which makes the end much better for driving.

The Cologne Mining Company have received, through their President, Col. Curtis, C.B., at Brussels, the following most gratifying intelligence from their Inspector at Derschlag. It must be premised that, thanks to Col. Curtis, it has been discovered that the spot ore of their Vahlberg Mine, which exists in immense quantities, and which hitherto has been found comparatively of little value, contains a good percentage of copper. The Inspector, Mr. Whyte, writes:—"Bucking the spot is finally finished, and the result is that 4 1/2 tons English of rough spot stone, taken at 3 shillings, or 9s. English; the quantity of clean bucked spot was 4 1/2 tons English. The quantity of copper is so much greater than I anticipated, that I intend, as soon as ever the weather will permit (we have again a foot of snow, and a severe frost), to have every ton of stone containing copper laying on the surface thoroughly dressed." The Inspector further intimates that the discovery of the lode of brown ironstone in the lower depths, and to find which the company had been put to great expense in preparatory works, has at last been made. Upon this point he writes as follows:—"VÄHLBERG.—Passed Saturday at the mine, and the steiger believed that they had the previous day cut out the lode from the cross-cut at the bottom of the shaft, descended to view it myself, though still not recovered from my late illness. I had, however, the satisfaction of seeing that, after driving the cross-cut about 1 fichter, instead of 2 to 3, as we had judged would be necessary, a fine dark brown ironstone had been cut; and from all appearances, particularly the rush of water after every stroke of the pickaxe, I have very little hesitation in saying it is the lode." The administrative council consider the occurrence of these two events as likely to exercise most beneficial influence on the future prosperity of the company.

The Australian Mining Company have advised from Charlton to Nov. 26. Mr. Forster writes:—"In the upper district, which will be proved in depth by whim-shaft No. 1, we have white killas, more or less mixed with sand, and which contains over the whole area blue carbonates of copper in balls of various sizes. In the end going westward we have just now more ore than ever. This end will be continued to the hill. The opposite end is now being driven eastward, and will be continued so far as appearances warrant. I cannot but think that one of these two ends will intersect some main lode to the source from which all the ore we have met with in this channel of ground is derived. At and around whim-shaft No. 2, is a regular channel of brown killas, intersected by branches of ore and gossan, and in all probability these different branches in depth will form separate lodes, or units and form one master lode. In my last, I informed you of the great improvement discovered by the cross-cut from the whim-shaft, driven at a depth of only 11 fms. under surface. When we next see the lode, I expect great things. The shaft will be sunk an additional 12 fms., at which depth I expect the lode will be in the shaft. We are now busy creating the whim, which will be ready by the 5th of next month."

The Collacombe Mining Company have convened a meeting for Thursday next, the present state of the accounts admitting of a dividend being declared.

The Cwrt Eiggia Quarry Slate and Slab Company have given notice that all outstanding scrip must be forthwith sent in, for exchange for sealed share certificates, and that any scrip not sent in by April 4 will be liable to forfeiture. A call of 3s. per share has been made.

The General Mining Company for Ireland have called a special general meeting for April 11, when it will be proposed to bring the company under the Joint Stock Company's Act, 1856, limited. Resolutions will also be submitted to reduce the capital from 250,000/- to 60,000/-, and the nominal value from 25/- to 10/- per share. The directors will also ask for authority to issue 1552 new shares, which, with the 448 already issued, make up 6000/-, and to alter the number of directors from ten to seven, so that the board, after the next meeting, shall consist of a chairman, vice-chairman, and five directors. The funds of the company to be invested in three trustees—the chairman, vice-chairman, and one of the five directors—to be elected at the first board meeting to be held after the general meeting in June in each year.

The Fortuna Company have convened their annual meeting for Tuesday next, it will be afterwards made special to consider the propriety of altering the month for holding the meeting, to enable the directors to be in a position to present the annual accounts to the end of the preceding year.

The United Mexican Mining Association have published a contradiction to the report that intelligence had been received that the mines of Jesus Maria y Jose had suddenly ceased. The last report received by the directors was to Jan. 29, and at that date ore was returned from five different points, and at distances varying from 5 to 100 and 150 ft. It had been stated that the mine had fallen in or was inundated; it might be possible, but the association had no reason to believe in the accuracy of such reports. A private letter of Jan. 30 states that the mine had altogether failed. Our readers must judge the value of such a statement, when on Jan. 29 the mine had improved at five different places. As the directors expect to receive most important information by the next mail, it would appear that the statements published are merely for stock-jobbing purposes.

## THE MINING JOURNAL.

### COPPER ORES.

In the National Brazilian Mining Association Chancery suit, Sheppard v. Oxford, the 15th April is appointed for the creditors to come in and prove their debts before Vice-Chancellor Sir W. Page Wood; and the same day is named for the shareholders to establish their claims, or they will be summarily excluded from participating in any benefit that may hereafter arise. This proceeding will have the effect of ascertaining the names of the shareholders, as the 20th April is appointed to adjudicate upon the claims.

The average production of the Australian gold mines may now be estimated at 12,000,000/- per annum, of which about 11,000,000/- is exported.

The London General Omnibus Company have convened their annual general meeting for March 31, at Paris. It may be interesting to intending speculators to know that no shareholder can be present at the meetings of this company unless he hold at least 50 shares, the shares being 4/- each. No person holding less than 200/- worth of shares has any voice whatever in the management of the company's affairs. Every shareholder entitled to vote must deposit his shares, at least five days before the meeting, at the offices in London or Paris, in exchange for which they receive a card of admission to the meeting. Shareholders holding 50 shares can vote by proxy, provided their proxy is also a shareholder entitled to vote.

The committee of the Stock Exchange have not yet come to any decision on the question as to the issue of scrip by companies established under the Limited Liability Act, and upon which the opinion of the Solicitor-General has been obtained. The consideration of the point is deferred until the usual weekly meeting, on Monday, and the views of the learned counsel have not in any way been suffered to transpire.

**RAILWAY TRAFFIC.**—The Traffic Returns of the Railways in the United Kingdom for the week ending March 14, amounted to 406,283/-, and for the corresponding week of 1856 to 384,538/-, showing an increase of 21,445/- The gross receipts of the eight railways having their termini in the metropolis amounted for the week ending as above to 164,266/-; and for the corresponding week of last year to 159,644/-, showing an increase of 4622/-.

The increase in the Eastern Counties amounted to 2134/-; on the Great Northern to 710/-; on the Great Western to 423/-; on the London, Brighton, and South Coast, to 323/-; on the London and North-Western to 1685/-; and on the South-Eastern to 124/-; total, 5406. But from this must be deducted 24/-, the decrease on the London and Blackwall, and 742/- on the London and South-Western, leaving the total increase as above 4622/-.

The receipts on the other lines in the United Kingdom amounted to 211,997/-, and for the corresponding period of 1856 to 225,194/-; showing an increase of 16,803/-, in the receipts of those lines, which, added to the increase on the metropolitan lines, makes the total increase 21,445/-, as compared with the corresponding week of 1856.

**TELEGRAPHIC COMMUNICATION WITH INDIA.**—It is only within the last few weeks that the telegraph to India via the Red Sea has come prominently before the public, though negotiations about the concessions began more than 18 months ago. It is to be observed that both the Red Sea line and that by the Euphrates commences at Alexandria, and terminates at Kurrachee, in the East Indies. The Euphrates line proceeds as a submarine to Jaffa and Selevia, then as an underground line to the head of the Persian Gulf, and then it again becomes submarine to Kurrachee; that by the Red Sea is overland to Suez, then submarine to Aden and Kurrachee down the Red Sea, and following the coasts of South Arabia. In length, that by the Euphrates has the advantage by 300 miles, but that is only the difference in the distance from England to India, and as news will travel instantaneously from one end to the other of each line, the point for consideration does not lie in that difference. The commercial classes will look to the cost of construction, cost of protection, and freedom from interruption of each line; also to the local advantages each line will afford to trade. For this purpose, we can conveniently compare the underground portion of the one line through Mesopotamia, a distance of 1000 miles, with the submarine portion of the other down the Red Sea, a distance of 1200 miles—the difference nearly representing the whole difference in length of the respective lines. An underground line consists of a cable, similar to that used for submarine purposes, laid in a trough or pipes, from 3 to 6 ft. underground. In the items of the trough and the digging, especially in a country where manual labour will probably have to be imported, the underground line is at a disadvantage, as the submarine has only to be laid from a steamer. In the item of cost of protection, we are met by a serious difficulty of the Euphrates line. By the accounts of all travellers, the Sultan is only in possession of the towns; the country up to their walls belongs, or is subject, to the continual incursions of wild nomadic tribes of Arabs. The proposal is to subdivide the Red Sea to be military posts, or on British territory, as Aden and Koora Moor, and in every instance will be on the sea shore, where they can be supplied, and, if necessary, protected by a ship. As regards the local advantages of the two lines, there is no comparison. In the Persian Gulf there is only a small local trade, principally in horaces. The Red Sea is the highway of commerce to India, China, Australia, and England, and at the numerous stations, particularly at Aden and Suez, ships can send and receive instantaneous news—a very important advantage. Complete charts and soundings exist from Suez to Kurrachee, so that the cable has only to be laid. We recommend the attention of those interested in India to this subject.

**SALE OF EAST WHEAL VOR.**—Mr. T. P. Thomas (Thomas and Marlborough) submitted for sale by auction, at Garraway's, on Thursday, East Wheal Vor. Mr. Thomas, after reading the particulars, stated that the sett was east of the celebrated Great Wheal Vor Mines, and it was considered that many of their lodes run through East Wheal Vor. The district was one of the finest in the world, and he believed there was every prospect of making it a good mine after sufficient ground was laid open, and that large returns would be the result. The mine had produced 2000/- worth of tin already, and only a little more capital was required to make it a good investment. He (Mr. Thomas) had no doubt that many had come to bid who knew more about the mine than he did; and therefore, he would not occupy their time with any lengthened remarks, but would merely observe that there was erected on the mine a 40-inch steam pumping-engine nearly new, with excellent boiler. There were two shafts sunk 60 fms., the pitwork had 9, 10, and 12-inch pumps, and all the machinery was in completely working order. The dressing-machine was also in a perfect state, and it only required to light the fire under the boiler to commence operations. Looking at the list of machinery, he was satisfied it must have cost between 2000/- and 3000/-, and he deemed it his duty to say that he had no reserved price. The property was not sold because it was not desirable, but because certain parties did not pay their portion of the calls. With regard to the title, the lease, from a highly respectable gentleman in the neighbourhood, was already engrossed and ready for signature; the terms were the moderate royalty of 1-13th, and if a spirited party purchased the mine, the lord promised to give up the dues for the first twelve months. The biddings commenced at 400/-, and after a very spirited competition the mine, machinery, &c., were sold for 70/-.

**THE GOLD SCHEMES—“RIGGING THE MARKET.”**—Before Vice-Chancellor Stuart, yesterday, in the suit “Robson v. the Earl of Devon and others,” the plaintiff sought the repayment from the defendants, who were the directors of an abortive scheme for a company called the Melbourne Gold and General Mining Association, to be conducted on the Cost-book System, of a loan of 500/-, and also for money expended in the purchase of 12,000 shares in the concern, which he alleged he had bought at the defendants' request, “to raise the price of shares in the market.” The Vice-Chancellor, on the case coming on, directed the hearing to stand over for six weeks, to enable the plaintiff to cross examine the witnesses who had given testimony on behalf of defendants. Messrs. Bacon, Mallin, Craig, G. L. Russel, T. Stephen, E. F. Smith, Baggalay, J. de Longueville Giffard, and Higgins were for the various parties.

**COMPLAINT AGAINST A COLLIERIE PROPRIETOR.**—At the County Police Court, Wigan, Mr. Henry Harrison, of Pemberton, was summoned by Mr. Higson, the Government Inspector, on two charges:—The first was, that he had neglected to provide a steam-gauge for the engine at the same colliery. Mr. Pease, in supporting the complaint, after a brief introduction, called Mr. Higson, who proved that several months ago he had visited the colliery, and pointed out to the defendant the defects of which complaint was made. The defendant then promised to comply with the general rules, and supply what was requisite, but had not done so. Other visits had been paid, and correspondence on the subject had passed between the witness and complainant; but up to the present time the defects were still unspotted. The defendant pleaded guilty to the charges, and was fined in the mitigated penalty of 20/- for each offence.

### COPPER ORES.

Sampled February 23, 1857, and sold at Swansea March 17, 1857.

**Ex Llandudno and Toocspilla, sold at Liverpool on the 19th March.**

Tons. Price per ton. Amount.

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Lot 2 80 19 16 8 1586 17 6

Lot 3 75 17 2 6 1244 7 6

Lot 4 75 17 17 0 1338 15 0

Lot 5 75 18 3 0 1361 5 0

Lot 6 75 18 3 6 1363 2 6

### COPPER ORES.

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Mines

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## Notices to Correspondents.

Much inconvenience having arisen, in consequence of several of the Numbers during the last year being out of print, we recommend that the Journal should be regularly filed on receipt: it then forms an accumulating useful work of reference.

CONCENTRATION OF COPPER ORES.—I have noticed the process reported by you for reducing low copper ores, as practised at Foldahl, in Norway. A patent has been taken out here for the concentration of these ores; no acids are used. In the course of a few days I trust I shall be able to forward you some practical remarks as to the adoption of this new method of reduction. Should it be found practicable, it will enable the mining adventurer to utilise all ores of low percentage, and materially reduce the cost of working many mines where such ores are produced.—GERMANICUS: Paddington, March 20.

THE CORNWALL MINING SCHOOL.—To whom are we indebted for the introduction of this noble plan?—and was it the intention of the mover to confine its influence and whole sphere of usefulness within the boundary lines of the town of Truro? Was it not the intention of its founder to establish district schools? Then, why not carry out such a plan?—A CORNISH MINER: March 16.

EARL CORNWALL ELECTION.—Do the miners intend to re-elect Mr. N. Kendall? or do they prefer one who will protect their interests? No razing of mines, and liberal education for the miners' children!—A CORNISH MINER: March 18.

ROTATING BUBBLE.—Permit me to inform "R. S." (Truro), through your Journal, that I shall be happy to show him a plan and section of Zener's rotating bubble, if he will favour me with a call. I hoped long since to have placed a model of that machine in the museum of this institution, the patentee having promised it; and I think it will be Mr. Zener's interest to place one at our disposal as soon as possible, as it may be a means of introducing what appears to be a valuable machine into the country much earlier than if left to chance.—W. RICKARD: Mining School, Truro, March 16.

"ANOTHER LEGAL MISTAKE."—I observe, in your Journal of March 7, a letter signed "T. H.," in which allusion is made to Harry Lowden, a man who died most suddenly whilst at work in the Brandley Mine, one of the mines belonging to the Kewick Mining Company. This man had been in the employment of the Kewick Mining Company for about 12 months, during which time I am not aware that he lost any time from drinking, one of the charges alleged as a reason why he was dismissed from the Goldscope Mine; and as to his capabilities as a miner, his practical knowledge was unimpeachable. I am induced to write this letter from a desire to remove any wrong impression which your correspondent, "T. H.," may be labouring under, as well as to remove any stigma that may have been unwittingly thrown on the character of a dead man.—R. B. SHERFORD: Kewick Mines, Portinscale, Kewick, March 11.

IRISH PEAT COMPANY.—Will you endeavour to ascertain whether this company continues to realise profits? and if so, whether the same amount per week has been maintained as announced at the last meeting?—D. A.: Paris, March 18.

QUARTZ ROCK.—One who represents 5000 shares in this undertaking complains that the directors of the company have rendered no account of their stewardship. Although repeated applications have been made to the shareholders for funds, their claims have been lately totally ignored. The directors are men of high standing; they refuse to attend to any private applications. The offices are let to an American railroad company, and no information can be obtained whether there are any operations being carried on in California. When the first report was issued, they were informed that Mr. Alderman Carter went down into Cornwall and selected machinery, and the whole project was ushered forth to the public with a flourish of trumpets, the late Lord Erskine being the Chairman, supported by two aldermen, one of whom had passed the civic chair. Our correspondent should apply to Mr. Fred. Dingley, the solicitor and secretary *pro tem.*, who has offices in Austinfriars.

WHAT HAS MINING DONE?—"J. P." writes that, in our last Journal, a "Clerk" informs the public how much money has been made by mining. "J. P." thinks the "Clerk" ought to inform the public how much money has been lost, by attending to the advice of those disinterested individuals who offer their services to guide others in their speculations; he likewise enquires how many thousands have been made in the locality of Sortings Consols, and what is likely to be got from several other mines somewhere near Tavistock; an account of those who have been enmeshed, and the misery entailed upon many would be perused with interest.—[A large amount of capital has, no doubt, been lavishly and wastefully expended in mining; but in the majority of instances it has been in a great measure owing to the want of caution, and cupidity on the part of the speculators. Many shareholders, after they have embarked in a mine, never attend meetings or inspect accounts; the consequence is that the entire management is in the hands of a few individuals there, who, although not dishonest, may be incompetent. What we would recommend is, that those who embark, or are interested, in mining should always exercise a due supervision, and this can be effected without vexatious intermeddling or injurious action.]

ANGLO-AUSTRALIAN GOLD MINING COMPANY.—Sir: I perceive that several of the shareholders of this association request that a meeting should be convened, in order that the position of the company may be explained. I was told that by the deed of settlement we were to have an annual meeting held every March. The offices of the company have long since been given up. In referring to your Journal of last week, I observe, in the advertisements, the name of Chas. Hinks, Esq., Heathfield-road, Handsworth, Birmingham, as a director of the Albion Porcelain and Bleaching Clay Company; this gentleman was one of the promoters and directors of the Anglo-Australian Company; I would, therefore, advise those interested to apply for information to that gentleman.—LEX: Gravesend.

MINING IN THE ALPS.—I was rather surprised to read, in your last Journal, that the inspector sent out to report upon the Valais Mines had chosen the precise season when the snow prevented him from visiting some of the concessions which have been acquired by the company; but I have since seen the entire report, and may, therefore, make a few remarks upon the subject. This district is as rich as could possibly be desired; and, unless the mines are situated very far up the mountains, offers immense facilities for carrying on extensive operations, and gaining a fair amount of remuneration with the most primitive appliances. The chief want hitherto has been that of capital; and were that supplied, there is little doubt that immense profits would be realized. One French company, in the immediate neighbourhood of the mines which the Valais company has purchased, has been successfully working for some time, and has made profits which justify the expenditure of further capital in their extension; and it is intended to issue a fresh series of shares to raise the requisite amount. Now, I do not for a moment wish to detract from the merits of the Valais district, as I think I have given proof that mines there can be profitably worked, but I contend that the mines should be properly inspected by a French mining engineer, who is thoroughly acquainted with the peculiarities and difficulties, if any, of mining in that neighbourhood. The Baltimore Mine is not yet forgotten by the unfortunate shareholders, and names connected with the management recall such unpleasant thoughts, that I fear the public would not readily embark their money, especially if they also recall the "Gold in Wales" fever, which also too many remember, to their cost. From my connection with the Ark Indisputable Assurance Company, I find certain names indelibly engraved upon my memory; and when assertions for obtaining subscriptions for any purpose are verified by such gentlemen, I think it but fulfilling a duty to throw out a few hints as a caution. In conclusion, I may remark that the Valais district is rich in mineral wealth, and offers every chance of success, but it is absolutely necessary that the shareholders should have competent men in office, or Mining in the Alps may prove no more remunerative than Gold Mining in Wales.—A SHAREHOLDER IN THE A.R.E.

ZENER'S ROTATING BUBBLE.—In reply to the enquiry of your correspondent, "R. S." (Truro), in last week's Journal, I may say that the directors of the Nether Hearn Mining Company have been induced to order one of these bubbles, chiefly through the testimony as to its utility by their late manager, Capt. Jeffrey, of the Driggith Mines, Cumberland, who has one in operation at his mine, and which, so far as I know, is the only one at work in this country. Mr. Jeffrey has had very great experience in ore dressing, both in the North of England and in Cornwall; and, in addition to his testimony in favour of this bubble, published in your Journal of Nov. 24, 1856, Mr. Jeffrey, in reply to my enquiry if he was still satisfied with it, and if it was suitable for our mine, writes me on Feb. 26 as follows:—"Mr. Zener's bubble will suit any mine where there are stones to wash. That stuff you have over at the old washing floor, it would clean well. In fact, it is the best thing I ever saw for slime ore, or any stuff approaching towards slimes. You cannot work it to so good advantage in the crushing mill, as we can, for want of fall, but it will clean your slimes four times cheaper than any other process I know of." Having dressing machinery to erect, and finding Mr. Zener to be reasonable in his charge for licenses, and the cost of erecting one not great, we have determined to give this bubble a trial.—J. H. ROBINSON, Purser: Nether Hearn Mine, March 19.

COAL IN BIRMINGHAM.—Can any of your correspondents inform me what is the annual consumption of coal in Birmingham for motive purposes?—ECONOMY.

IRON SHIP-BUILDING.—Mr. John Clare, jun., of Liverpool, observes that the present craft generally in use are unmechanically constructed, their powers being solely adapted for smooth water, and many of them being incapable of standing against the elements. The land sea, the crop head sea, and the rolling sea, are not studied in their construction, nor is the force of the wind observed; and the dreadful accidents that now occur could be obviated if a proper system were laid down, by which these vessels could be built. The best iron should be used; and at the present time it behoves the ironmasters of Great Britain to see that the manufacture of that important staple of trade, with regard to ship-building, should be carefully looked to, in order that England may maintain her present pre-eminent position.

"Q. E. D."—The mode of smoke consumption you propose was tried, many years ago, in Lancashire, and failed. A few years since it was patented, under the idea of novelty, and attempted to be used by two extensive London establishments; but very soon abandoned. The effects are considerable loss of steam, and very imperfect destruction of smoke, with great risk of explosion. Smoke prevention, by proper ignition of the gases, is perfectly feasible, according to the systems of Mr. Charles Wye Williams, Liverpool, and Mr. John Lee Stevens, London; who, whilst they differ in details and peculiarity of construction, agree in the impossibility of consuming smoke when once produced.

BINNERS DOWNS MINE.—A correspondent enquires whether this mine, which was in existence in 1854, is totally abandoned, or whether it is still working under some other denomination?

THE FORTHCOMING ELECTIONS.—I cordially agree with the remarks in your Journal of last week. Previous to the Reform Bill, and the disfranchisement of Grampound, Cornwall returned 43 members. It was noted for its rotten boroughs, and the present representation synonymous with corruption. This epoch is now past. In the Parliament now about to be dissolved we have been mis-represented, the mining interest neglected, and an attempt made by some of the members we sent to the House of Commons to impose a tax upon the working miner and adventurer. Let this be remembered on the day of election, and the candidates required to pledge themselves to attend to the local interests of the electors: let not mining, our staple industry, be neglected. The old Cornish spirit is not extinct yet. Let us have none but good men and true, and such as will not forget the people and the sources from which they have derived their wealth. If we are firm to each other, the result is certain, and we shall be able to return those who will do their duty, and not allow the claims of the working miner to be totally ignored, as has been the case in the new name and almost defunct Legislature.—PENDRAGON: Tintagel, March 19.

"A. P." (Maida-hill).—The Brighton Hotel Company have obtained their certificate from the registrar. Much progress has not hitherto been made in the formation of the association, which is under the Limited Liability Act. We are given to understand that an amended prospectus will shortly be issued.

DALKEATH MINING COMPANY.—Some three years since, I was induced by one of the promoters to take shares in this association. I was afterwards informed that it was a failure, and that the works were abandoned. Unfortunately, I did not look after my own interests—in fact, I neglected to attend any meetings, having too great a confidence in the directors. Judge of my surprise, some short time since, being in Stockholm, at hearing that the Swedish proprietors, to whom they had reverted, were working them at a profit, and that the superintendent, who had been sent out to manage them, condemned them almost as soon as he had seen them—nay, it was even whispered that he was instructed so to do. I cannot vouch for the truth of this statement, but the mines are now in full operation. Can we wonder that foreign mining is in disrepute, when such practices as this occur? The English company is wound-up, and redress is now out of the question; but this simple fact has taught me that those taking shares should not only ascertain whether the mines were worth working, but likewise if the directors were competent to manage them. One point those embarking in mines should always look to is, whether it is a legitimate undertaking, or got up solely for the purpose of trafficking in shares. In many instances, a good property is ruined by those whose only intention is to make a market for such scrip as they may obtain.—A TRAVELLER: March 19.

BALLYLIVIN COPPER MINE.—A would-be shareholder, who understands that the prospects of the property are good, complains that he has been unable to obtain any information as to the present position of the mine. He has not, on inquiry, received any answer to his queries as to its produce and other matters connected with the adventure. His best course would be to write to the secretary, at the offices.

"W. F." (Tarbert).—All quartz and limestone veins do not contain copper ore; there may be a great similarity between this particular stone and that bearing copper, from the Marquis of Breda's property, but it does not follow that it should be of the same nature. The ores of iron, according to the report, appear to be of a most valuable kind, and the appearance of the district may probably bear out the most sanguine anticipations entertained of it; capitalists, however, will be found unwilling to advance their money unless they know the estate has been inspected and reported upon by a competent engineer in whom they can place confidence. This should at once be done, as by its some correct approximation of its value could be arrived at. The property appears to possess great facilities of transport, but this is not all that is required. Previous to works being laid out there are many weighty questions to be considered—as the price of labour, materials, &amp;c. Such a report as is necessary can only be made by a practical mineral surveyor.

BLAST ENGINES.—Truran's work does not treat upon the construction of blast engines, but in reference to blast furnaces, and the manufacture of iron generally, it is one of the most valuable works extant.

CONCENTRATION OF COPPER ORES.—SIR: The question of independent smelting may for a time now be considered as one of the things that were. The process described in your Journal of March 7 is one which appears to require but little capital; and a poor mundic ore could, by it, be reduced at a cheap rate, on the spot. Surely this is worthy the consideration of some of our mine proprietors. According to the statement published by you, the cost is comparatively trifling; it is worth a trial. I have no doubt that if the owners of the Fouldal Works were written to, they would afford the necessary information, so as to lead to its practical adoption here.—G. W.: Camden Town.

CALIFORNIAN CONSOLIDATED MINING COMPANY.—SIR: I have not heard whether this association has again resumed operations in California. I have long since expected to see an explanation from Sir Henry Huntley, of the charges brought against him by the directors. They answered his letter immediately it appeared. By this time he must have been able to reply to it from California. It would be most satisfactory to the shareholders if, when the gallant Knight returns to England he would meet them, and render an account of his stewardship. He would not have an inattentive audience. There are many who would like to know how the money has been expended in California without any return.—PAXIUM: Poole, March 17.

THE DUN HILL MOUNTAIN.—I perceive in the *Times* of yesterday a prospectus of the Dun Hill Mine, in which it is stated to be a freehold. I would recommend those who purpose to invest in it to satisfy themselves fully before doing so. I was in Nelson two years ago, and declined having anything to do with the mine, for the following reasons: 1. Because the projectors had only a lease for a few years, and not a freehold. 2. Because a continuation of the same veins or lodes to the north dropped out on the sea shore of D'Urvilley island, a few miles off, which when purchased from the natives, would, from the ease of access, take off all the labourers from and deplete the Dun Mountain Mine.—3. The cost of labour, the distance from the port, and the extravagant conditions demanded.—4. It appears that the 17 and 23 per cent. obtained was only out of the picked ores. The general mass is of much lower value, and can only be available when labour is abundant and cheap.

—A LATE VISITOR TO THE DUN MOUNTAIN: March 17.

WEST MARPION MINING COMPANY.—Another batch of shareholders, holding 2000 shares, have, through Mr. Lindo, of King's Arms-yard, succeeded in getting from Mr. Ambrose Moore 3s. 3d. per share. It may be remembered that Mr. Furlonger and Mr. Guedalia invited the whole of the shareholders to co-operate, but from the fear of having to contribute a trifle towards the expense, kept back. Those who came forward received 4s. 6d. per share, and Mr. Furlonger and Mr. Guedalia, with several gentlemen connected with the Stock Exchange, in the most handsome manner paid every expense out of their own pockets. The next lot who may seek the assistance of Mr. Lindo may very likely be offered 2s. 6d. per share, and will have the option of taking it, or instituting proceedings in Chancery.

ON GOLD AND SILVER EXTRACTION.—Mr. P. A. Godfrey, after some lengthy comments on the letter of "Practice," in last week's Journal, says:—"I turn now to a more worthy and ingenuous correspondent, who does not conceal his name. And in answer to Dr. Collyer's indirect allusion to my recent remarks concerning his novel treatment, I wish just to observe, that not professing myself to be scientifically learned in chemical lore, and pretending only to possess some measure of hard-earned practical experience in solvents and other objects in this department of chemistry, it is very possible I may, in describing my process, have failed in very nice distinctive application of technical terms; but, my aim has been to make myself intelligible to parties who were in a position to reap benefit from my discovery; and in this, I believe, judging from the extent of my correspondence on the subject, I have pretty generally succeeded. I hope Dr. Collyer will not take it amiss, if I again enquire, where appear the beneficial results of his treatment lately announced as new and successful, but to the assumption of which I took the liberty to offer a respectful, but decided negative! While agreeing that lime combined chemically with sulphur, I differ with him entirely in its being assumed to "hold mechanically the small specks of gold from being lost," permitting the evaporation simply of the sulphuric fume while retaining the metal; and I speak here, as already said, upon the authority of my own previous trials of that process, containing that the "effectual method of securing the gold or silver, or any other metal, combined with sulphur, is by my own first-discovered means of solution in a vessel, preserving all evaporation, from which, of course, no substance can escape; and wherein the sulphur being extracted and absorbed, the metallic deposit does not adhere in any way, but remains in a granulated state to be reduced afterwards by ordinary smelting operations." This I have repeated often; but tautologies are occasionally useful, and especially in a case like the present, where the treatment is so simple and inexpensive, and the effect so surprising, that the initiated in metallic mysteries can hardly believe it even on the evidence of facts. But, I must not be prolix, and should, indeed, apologise for having intruded so far. To conclude, I say to Dr. Collyer—and with all deference to the reputation of the eminent professor he has quoted, and their ever-memorable discoveries—*Vitis coronat opus*. The object here is a commercial, involving also a great national, benefit. Show me any system by which these "specula" of the precious metals (I borrow the doctor's own term) either of gold or silver, or, indeed, any other metal, can be profitably—*I say with emphasis*—profitably secured, and at once I yield the palm of originality in this matter; but, that not having heretofore been done, I think I may fairly claim for myself, and my process, the merit of doing it.—King's Mead Cottages, New North-road, Islington, March 16.

GOLD EXTRACTION.—You have been good enough to allude to my process for the extraction of gold from auriferous matrices, and I therefore take the liberty of requesting your permission to mention, through the medium of your Journal, that I shall be happy to explain my system to any of the gold companies, or others, interested in this important question, and to operate on their ores.—F. SCHAFF: 74, King William-st., March 15.—[The foregoing letter is the best reply we can give to correspondents who desire further information on this much-revised question of gold extraction, or reduction. We understand that the gold which exists largely in the present system, is brought by Mr. Squire's method into a metallic state, by the aid of certain re-agents, which decompose the oxide state in which much of the gold is discovered to be, and is presented in a form with both density and specific gravity; while such particles previously visible in minute form, if at all, are developed in globules, and the quartz at the same time becomes disintegrated, and perfectly friable, on the application of the slightest pressure.]

ROTATING BUBBLE.—We are requested to inform "R. S." (Truro) that every facility will be given by the patentee to parties

absorbed by salaries to "officers" generally, and is 12 per cent. on the actual income, the "principal officers" taking 35941. 10s. 4d. as their proportion of payments to officers generally. This comes out in bold relief when it is contrasted with the disbursements for "wages," which are lumped with "rates, taxes, stationery, wages, and incidental expenses," and yet collectively show an item of only 6641. 11s. 5d., or a little more than 1 per cent. on the income. Law charges, which are not in any way defined, take 15731. 4s. 9d., or 2½ per cent. of the whole. The amount appropriated to the Church in the shape of tithes is 831. 5s., or exactly the eighteenth part of 1 per cent., while the poor are remembered under the head of "donations and charities" to the extent of 893. 15s., or 1½ per cent. Thus far we have confined ourselves to receipts and disbursements, and are now come to "capital account." The balance cash on Dec. 31, 1855, is set down in this table at 73361. 0s. 7d., yet in the "receipts and disbursements" the cash balance at the same date is represented as 79531. 14s. 6d., so that there is here a discrepancy of the sum of 6171.

In Three per Cent. Consols there stood 94341. 19s. Id., and 14,117. 2s. 1d. in Three per Cents. Reduced, making collectively 30,8881. 1s. 9d., and the total to capital account on Dec. 31, 1856, represented at 33,210. 2s. 2d.; but if the cash balance of 51441. 5s. 10d. in "receipts and disbursements account" be added—and surely it is, to all intents and purposes, capital—there is a total of 38,3541. 8s., or an increase of nearly 80001., being 94341. 19s. Id. in Three per Cent. Consols, 16,2201. 1s. 1d. in Three per Cents. Reduced, and 70781. 3s. 3d. in New Three per Cents., 4761. 18s. 9d. cash balance, as shown in this capital account, and 51441. 5s. 10d. as just explained. This sum of 38,3541. 8s. is, however, a very miserable amount for the total invested capital and cash credit of the PRINCE OF WALES from his Duchy of Cornwall, considering the years it has been in course of accumulation, and the wretched charges and disbursements which have been made, apart from the salaries of the officers, and the income to PRINCE ALBERT, on account of the PRINCE, his son. On these points, however, we desire not to dwell; our province is to point out the advantages resulting from mineral property, and to protest against the abuses of position, which the officers of the Duchy desire to enforce, by throwing difficulties in the way of legitimate mining.

Attention is so much engrossed at present by politics and electioneering business that hardly anything else is considered. Although we enter heartily into the interest of these matters, yet, ours being a Journal wholly dedicated to science, we do not seek information, or offer opinions, on the subject, except that we hope Cornwall and Devon will look to their own interests, do their duty, and repel the men who would tax their industry, cripple their trade, and destroy the most patient, and certainly the most industrious and persevering, race of men our country can boast of.

In the hurry of business, now so all-engrossing, it may not ill-serve us to direct attention to the late fall in the standard of copper ore. Why this is, we confess, we are at a loss to know. What on earth can the crisis in politics have to do with the price of copper ore? The smelters know, and they only know, the barometric changes in the great copper scale; to outside viewers their ranges are as extraordinary as the vagaries of Saturn. This curious question was solved by a Cornishman (ADAMS), but we defy the cleverest Cornishman alive to unravel the mystery of smelters' prices. No matter what is up, whether weal or woe, an excuse is always at hand. Money is scarce, down goes the price of copper; money is plentiful, and other speculations are ascendant, down goes the standard, until the smelters find they outrun their policy, and stop such mines as Tywarnhayle, and other low-priced ore-producing mines. When their highnesses please they restore the standard; many struggling little mines, full of life at the high prices, lay out capital extensively, firmly trusting that the good time has come, and which trade generally would warrant, when, on a sudden, a frost, "a bitter frost, nips all their greatness in the bud," and they fall, like Lucifer, never to rise again. And all this to suit the caprice of smelting.

Do they lower the price of the manufactured article in a similar manner? We doubt it; indeed, we know they do not. They should remember the *ts quoyne*, and "Live and let live."

An important change in the "spirit of the dream" is at hand; on all sides we hear that the best miners are leaving the country for Australia, America, &c., and smelters, as well as mine proprietors, will do well to consider the old Cornish couplet—"Tis too late, when the squire has drained every drop, for the landlord or landlady to cry, Stop the tap."

If collateral evidence were required of the importance of the district which the WEST OF IRELAND MINING COMPANY has secured for carrying out their operations, it would be found in an article which appeared in the *Dublin Evening Post*, of Thursday, March 12, with a view of impugning the accuracy of the statements and comments which have been made by ourselves, on several occasions, in reference to the mineral yield of the Sister Isle, and the advantages which will accrue to the country generally by the opening up of a locality so rich in minerals as is the West of Ireland. Our general defect of information is sought to be shown by reference to two points—first, that we represented the dividend of the MINING COMPANY OF IRELAND to be 8½ per cent. for the half-year, instead of 7½; and secondly, that our statements in respect to the result of working through quartz at Ballydehob were greatly exaggerated; therefore, that our comments as to the general wealth of Ireland, in a mineral point of view, were equally devoid of substantiality, and that our sole object was "rigging the market," as the article in question is sapiently headed. That our contemporary of the *Dublin Evening Post* is anything more than a mere cat's-paw in the matter, is evident to everybody who has the slightest knowledge of the current events in Ireland, and it is therefore with most unfeigned regret that we find this influential and important commercial paper lending its columns to the endeavour to prejudice public opinion, and to frustrate an undertaking of such real value and consequence to the general prosperity of Ireland, as a company of strength and respectability, having for its object the development of her vast and undeveloped mineral resources.

The source of the article is the MINING COMPANY OF IRELAND; if it has not emanated wholly and bodily from that jealous and narrow minded directory, who wish to monopolise everything, yet have not the heart to venture a shilling, it is quite clear that the information must have been conveyed to the *Post* by some of the committee or officials of this company, who desire thus to render themselves conspicuous as obtrusives to Ireland's advancement in the general progress of all commercial matters.

Our object has been the reverse. We desire to encourage the employment of British capital in Ireland's industrial enterprises, and knowing that we can do so most conscientiously as respects her mineral produce, we have drawn attention to the question by stating facts—facts so undeniable that those only of gross effrontry would have the temerity to gainsay or question them. We believe that Ireland presents many points of deposits of ores of almost every kind, both rich and extensive; and nothing, we are convinced, is wanting but energy and funds to bring these districts into full bearing, and thereby assist materially in the amelioration of the people and the country, in every department of trade and commerce; for surely all are more or less associated with, or dependent on, the production of mines, which, as we have repeatedly shown, represent the enormous sum of 27,000,000<sup>000</sup>, in the exports, which collectively amount to 115,000,000<sup>000</sup> from the United Kingdom.

Our articles have not been communicated from the other side of the Irish Channel, as asserted by our contemporary; and, indeed, the facts are so patent that they require no special communication, especially to the MINING JOURNAL, which is essentially a class paper, and which would be lamentably deficient if it were not conversant on all these points and details. One error, it appears, we did commit. We stated that the dividend declared by the MINING COMPANY OF IRELAND was 8½ per cent. for the half-year, instead of 7½, and consequently we spoke of a rate of 17 per cent. per annum, whereas we ought to have said 15 per cent. This mistake arose simply and solely by placing faith in a printed statement, in which, no doubt, the blunder was made most unintentionally; but it is quite clear that it ought to have been 17 per cent., while, if the affairs of the company were conducted with due regularity and judgment, the division of profits might have been even still more—at least, so our contemporary, the *Dublin Evening Post*, demonstrates in its article on "Rigging the Market." It is therein admitted "that arrears have been suffered to accumulate through irregularities in the mode of conducting some branches of the business of the company;" and yet, little further on, the "judicious" management of the company is said to entitle it to the confidence of the public. It is not for us to reconcile these two assertions, so contradictory.

With the exception of this point of 17 instead of 15 per cent. dividend, we deny emphatically that we have committed any error, and our position and long standing are sufficient refutation of the charge that we desire to

"mislead the credulous." However, to be brief, as respects the other points—First, we can refer to the letter of Mr. HUNGRIDGE, which appeared in our last number, under the initials of "T. J. H." who therein confirms our general views of the Mineral Wealth of Ireland, and that whom there is no one more competent to form a correct and sound opinion, while he is a well-known authority. In fact, his views support ours fully, and are in direct antagonism to those enunciated through the *Dublin Evening Post*. Another correspondent, in this day's Journal, likewise alludes to the advantages to be derived from the formation of a powerful company, and plainly accuses the Mining Company of Ireland of being the authors of the attack.

The statements of the discoveries at Ballydehob are true: the whole country round will endorse them; and the manager of the Mining Company of Ireland himself confirms our assertions. Copper has been discovered, and the theory laid down by Mr. HOSKINS practically established. Whether there is a "continuous" lode or not has yet to be determined. "The result is," says the *Dublin Evening Post*, "that no continuous lode of copper has yet been found at the mine in question." The finding of ore is in fact admitted, but a "continuous lode of copper" has not yet been found. We should indeed rejoice to hear that a lode of copper was met with; and we apprehend that it will be difficult to discover such a mass of metal, but we do believe that a continuous lode of copper ore will be discovered even if it be now in bunches only. This is mere special pleading—unworthy of any person or company—and especially with those who do not know the difference between "metal" and "ore." The summary of the whole is, that the Mining Company of Ireland desire the property secured to the West of Ireland Mining Company, and resort to this method to prevent competition; but, alas! for them, too late. It is true that no direct offer has been made by this body, but the negotiations in London have been watched with great anxiety; they have now terminated in the formation of the company, the subscribed memorandum of association of which is now in the hands of the solicitors.

The true and actual motive of this prophetic warning in the *Dublin Evening Post* is wholesale eulogy of the Mining Company of Ireland, and wholesale condemnation of all other companies, either past, present, or future! Who ever questioned or envied the success of the Mining Company of Ireland? but because, notwithstanding, to quote the writer's own words, "irregularities in the mode of conducting some branches of the business," and the "everything rotten" in their affairs to which he alludes, the Mining Company of Ireland can only pay 15 per cent. dividend, let no further capital, skill, or enterprise break ground in Ireland! Some blunders have tried it, and failed; therefore, let no man, or company of men, who have experienced, enter the rich field which we, the Mining Company of Ireland, alone are fit to occupy! Nothing more impudent, perhaps unintentionally so, or unwarmed by the facts, has come under our notice for many a day. Such attempts at reasoning really require no answer; as we cannot believe that there is a sane capitalist in the three kingdoms who will not at once see through them, and the motives by which they were dictated. Any company claiming public confidence will be judged on its own merits, irrespective of the existence, or intended opposition, of any other, which, if it have overcome "arrears," "irregularities" and "rotteness," should be content with the enjoyment of the happy and profitable position in which it now finds itself, and scorn to play the dog in the manger, by attempting to deter others from attaining, what it cannot reach, even if it would.

We have, unhappily, another evidence during the past week that "the (assumed) wealth, position, and standing of its proprietary" afford no positive security of the stability of a bank. It would appear that our predictions as to the future of many such established and projected institutions will be realised even more rapidly than we anticipated. Another has been added to the list of failures, in the LONDON AND EASTERN BANKING CORPORATION. "Owing," says the City Article of the *Times* of Thursday, "to the assistance which has been obtained, and which has prevented any direct stoppage of payment, the full details of the course of management which has compelled the undertaking suddenly to wind-up, with the loss, as it is believed, of a very considerable portion of its capital, will probably not come before the public. That great laxity must have prevailed is to be inferred, however, from the fact of 6 per cent. dividends having been paid up to July last, when the condition of the bank was stated to be so prosperous as to render it expedient to establish two new branches, the meeting being also informed that the audited accounts, after allowing for the dividend, 'the payment of all expenses, and writing off bad debts,' showed a surplus of 10,378<sup>00</sup> to be carried forward. Either this statement must have been deceptive, or the whole of such difficulties as have been experienced must have occurred in the subsequent interval."

While it would doubtless be a melancholy satisfaction to the shareholders to know to which of these alternatives they may attribute their present unfortunate position, this additional failure is but another instance of the insecurity of banking adventures, as contrasted with mining and other branches of commercial enterprise; arising from the difficulty of getting at the actual state of their affairs, the mystery (to the uninitiated) in which their transactions are so often clouded, and the very variable nature of their securities.

We are told, for instance, in the same article of the *Times*, that "at a meeting of the Alliance Bank at Paris, on Saturday, the report presented that the profits from the 7th of April last (the date of commencement) to the 31st of Dec., had been 19,215<sup>00</sup>. Out of this it was agreed to pay a dividend of 14 per share, which is equivalent to a rate of 16 per cent. per annum, and to appropriate 17351<sup>00</sup> for the entire discharge of the preliminary expenses, leaving a surplus of 63317<sup>00</sup> to be carried forward."

Now, without being in a position to question for a moment the perfect accuracy of this alleged report, could we, with the ominous facts daily disclosed before our eyes, be green enough—to use a vulgarism—as to trust that the accounts had not been cooked, or coopered up for the nonce, without satisfying ourselves, so far as that might be possible, amidst a wilderness of accounts, that all was right? We repeat that we know nothing of, and have no reason to suspect, the management of the Alliance Bank of the slightest irregularity; but in these days it is the duty of all

public companies to be more than ordinarily explicit with their shareholders and the public; and of shareholders and the public to be, if not distrustful, at all events, jealously particular, in their investigations into the management of those to whom their capital is entrusted.

We are told that the London and Eastern Banking Corporation always excluded the representatives of the Press from its meetings. When any body claiming public confidence adopts this course, we should regard it as suggestive of a doubtful position, and still more dubious intentions. Dishonest men only should fear publicity—honest men should court it.

The experiments in the factory department of the Woolwich Dockyard, under the sanction of the Lords of the Admiralty, in order to test the value of M. PAUVENO's invention for converting iron into steel by a chemical process, have resulted in the utmost success as regards the metal required for the manufacture of chisels and other tools, but the patentee will, it is stated, require a different apparatus for the manufacture of nuts and screws. Experiments for the latter purpose will, as at present arranged, be carried on at the factory department on Thursday next. The metal is denominated by the patentee "homogeneous metal," and has the advantage over malleable iron of being considerably lighter, and much more durable.

**THE COAL TRADE.**—From the annual statistics, issued by Messrs. Laird, of Liverpool, it appears the exports of coal in 1856 were—For Northern ports, 3,180,977 tons; from Yorkshire ports, 159,448 tons; from Liverpool, 414,311 tons; from Severn ports, 1,259,740 tons; from Scotch ports, 332,473 tons; being a total export, in 1856, of 5,346,949 tons, against 4,573,259 tons in 1855.—During 1856, the following quantities of coal were carried by railway: By the Great Northern, 591,434 tons; by the London and North Western, 443,672 tons; by the Eastern Counties, 11,265 tons; and by the Great Western, 47,348 tons: the total by railway being 1,246,299 tons.—During January, 1857, the exports were 303,019 tons, against 290,099 tons in the same month of 1856.

**THE METAL TRADES.**—A very useful Chart, prepared by Mr. JOHNSTON, metal merchant, of Glasgow, is now ready: it contains, amongst other information of the greatest interest to all connected with the metal trades, an elaborate diagram, showing at one view the prices of the principal metals during the past 16 years, the Birmingham wire and metal gauges and the modern Belgian zinc gauge, the weight and thickness of lead piping of various diameters, &c., thus forming a valuable work of reference for the counting-house of the iron merchant or broker. Copies may be had at the office of the *Mining Journal*. Price: Mounted, on rollers, 21s.; on plain sheet, 1s.

#### THE MINING AND INDUSTRIAL INTERESTS OF CORNWALL.

[FROM OUR CORRESPONDENT IN WEST CORNWALL.]

MARCH 19.—There has been a moderate amount of business done in mining shares during the week, and it is hoped, the share market will be still more active as the spring advances, and the elections are disposed of. The price of copper ore experienced a further reduction last week, although the smelters still charge the same prices to the manufacturers as they did five or six weeks ago, when they paid the miners higher rates. The standard is still a good one, and remunerative; but it is difficult to see that there was any sufficient reason for the reduction last week of 3s. per ton of ore, considering that fine copper still makes 135s. per ton. The smelters have been enhancing their profits week by week since the last sale in January. They surely ought not to lower the standard any further at present, as fine copper makes so high a price, and the advices from the manufacturing districts are of a favourable character. The progress of the home trade may be somewhat deranged for a few weeks by the election proceedings; but the foreign trade is reported to be in a sound and healthy condition. It is expected that the demand for metals will be more active in a few weeks, and, therefore, there is reasonable ground to hope that a firm standard will be maintained.

The average produce at the Ticketing last week, March 12, was 61; price per ton, 7s. 4s. 6d. The produce in the previous week was also 61; price per ton, 7s. 7s. 6d.; thus showing a decline last week of 3s. per ton. The price of ore copper last week was 105s. 5s.; in the previous week, 109s. 7s. Deducting the price last week from the price of cake copper, 135s., it appears the smelters retain to themselves 23s. 15s. per ton for returning charges and profits. On Jan. 29, the smelters' amount was only 16s. 6s. per ton. As they have now so much increased their profits, there is reason to hope that they will be satisfied with the present prices in their favour, and will consider that a further advance is due to the miner as soon as the metal trade becomes more active.

There have not been any remarkable improvements in mines to stimulate prices during the past week. Wheal Buller is stated to be looking well, and shares are firmly held, price 340s., and upwards. Confidence is also expressed in Alfred Consols, and shares have changed hands at 22s. 10s. Bassett shares have rather declined of late. St. Day United is spoken well of; and West Bassett continues to look favourable for a productive mine. In Great Alfreds there has been some business doing at about 10s. South Frances shares are at 335s. North Pool is reported to be improving; and North Roscar has good prospects. North Frances shares advanced last week to 21s., but have since declined. Cargoll advanced to 52s., but shares have receded to 40s. and 45s. In East Alfred, a mine of considerable promise, shares have sold at 27. 5s., and upwards. East Falmouth is said to be looking well; shares are about 32s. At Wheal Victoria, a very promising lode is reported; a call of 5s. per 2000th share has been made. Wheal Margery is looking well in the bottom of the mine, and the heavy call made recently will defray the costs of machinery, and place the mine in a good position. The tin mines are doing well with the present high prices of black tin. Of Great Wheal Vor there is a favourable report, and it is hoped this important undertaking will repay the shareholders for their expenditure and great outlay. At Wheal Lovell (as was mentioned in the Journal last week) Mr. Gwatkin, the owner of the soil, has consented to reduce the dues from 1-20th to 1-40th, in consideration of the adventurers forking the deep part of the workings. This is only one instance of many in which the landlords in Cornwall have acted liberally towards mining adventurers, and have found that course in the end most profitable to themselves.

The pupils of the Mining School at Truro have been occupied, amongst other things, during the session, in making an underground and surface plan of Wheal Jane Mine, in the neighbourhood of Truro. This, of course, brings the operations of practical mining to some extent under their notice. They have also paid a visit to Messrs. Harvey's foundry and engineering establishment at Hayle. There are all necessary facilities in the institution at Truro for teaching chemical metallurgy; and the value of the school for this purpose is admitted. Still, a considerable prejudice exists against the institution, and I am informed that the pupils do not increase. It is said by mine agents, that the only way of imparting instruction which would be useful to the mining body ultimately, would be by giving cheap instruction in mineralogy, &c., in the midst of the mining districts. Whether this will be carried out or not remains to be seen; but even if it is, the institution at Truro will be found useful for teaching chemistry, and some other branches. The establishment of the school at Truro, it is hoped, will lead to further and more effectual exertions for the instruction of the working miners, who are a shrewd body of men, and would not be slow in applying practically whatever scientific knowledge might be communicated to them.

The county and borough elections continue an absorbing subject of interest. When I wrote last week, it was fully expected that Mr. Humphry WILLYAMS would have come forward as one of the candidates for West Cornwall. Circumstances, however, prevented his doing so, and it was then thought that Mr. Michael Williams and Mr. TREMAYNE would have an uncontested election. The latter gentleman is a landed proprietor, principally in East Cornwall, and is scarcely known to the electors of West Cornwall. Great dissatisfaction was felt among the mining interest and middle classes of West Cornwall, that there should be a prospect of Mr. TREMAYNE succeeding such a man as Sir Charles LEMON.

Mr. RICHARD DAVY, of Redruth, a gentleman well known and highly respected amongst the mining interest, had been applied to, and had consented to come forward, but unfortunately the sudden and serious illness of his brother, Mr. STEPHEN DAVY, obstructed for a time this desirable result.

Mr. STEPHEN DAVY has now in a great degree recovered, and consequently, at Wheal Buller account this week, Mr. RICHARD DAVY, on being again applied to by an influential body of mining adventurers and others, consented to come forward, and a very strong feeling in his favour is expressed at Redruth and in the other mining districts. On the other hand, Mr. TREMAYNE will be supported by some of the most influential landowners of the western division; it will, in fact, if he goes to the poll, be a contest between the landed influence on the one hand, and the mining interest and the middle classes on the other. In West Cornwall, the mining interest is very strong, and "one and all" is now the cry amongst them. A severe contest is anticipated, and scarcely any other business will be attended to until it is over.

At Helston, Mr. H. W. SCHNEIDER, the chairman of the Great Wheal Vor Company, was announced, and as that mine employs a large body of people in the district, and Sir RICHARD VYVYAN had retired, Mr. SCHNEIDER would no doubt, if he had come forward, been quietly elected. It appears, however, that he has but up for another borough.—Sir CHARLES LEMON has issued his retiring address to the electors of the Western Division, in which he reminds them, that he and his father (Sir WILLIAM LEMON) have represented the county nearly 82 years. He retires in consequence of the infirmities of age. Sir CHARLES, it may be remarked, has long been conspicuous in the county, not only as a politician, but as a patron of science, and himself a scientific man of considerable acquirements. For many years he has been the President of the Royal Geological Society of Cornwall, the Royal Institution of Cornwall, and the Polytechnic Society,—institutions which are an honour to the county. But for some time past he has not taken the active part he was formerly enabled to do at the meetings of these societies, in consequence of the decay of his faculties through increasing age.

#### THE IRON AND COAL TRADES OF STAFFORDSHIRE.

[FROM OUR CORRESPONDENT IN WOLVERHAMPTON.]

MARCH 20.—The Iron Trade remains steady, without manifesting any extraordinary degree of animation. The gratifying announcement brought on Tuesday, that the import duty on iron in America was reduced from 30 to 24 per cent. (not to 20, as erroneously stated), gives promise of an extension of the American demand. The reduction comes into operation in July next, and probably in little more than a month large orders will be received in anticipation of it. Such a reduction is likely to lead to others, and we may expect, that the fiscal obstacles which check the free interchange of

a gentleman of high position and great ability, has been requested by the Liberal party to offer himself, and has given a conditional assent. A meeting of the members of the Ironmasters' Association, is called for Wednesday next, to consider the question. A considerable amount of conservatism exists amongst the members of the iron trade in this district, and a feeling is entertained by some who hold those views, that if practicable, a gentleman of more moderate views than Mr. Mathews is supposed to hold should be selected, but whether any will be found who is willing to come forward, is as yet, extremely doubtful.

In reference to the letter of Mr. Richard Cort, permit me to acknowledge his courtesy, at the same time to disclaim, for anything this letter ever contains, any title to the flattering term he is pleased to apply to me. All that is attempted in it, is simply to state carefully and truthfully any facts of interest, bearing upon the mining and manufacturing pursuits of the district. The discussion suggests the desirability of a memoir of the late Mr. Cort, by some one whose knowledge of the iron trade, painstaking research, and literary ability, would fit him for the task.

#### REPORT FROM YORKSHIRE, DERBYSHIRE, AND LANCASHIRE. (FROM OUR CORRESPONDENT IN CHESTERFIELD.)

MARCH 20.—The present aspect of the Iron Trade continues healthy. The elections are claiming a vast amount of attention, which would otherwise be devoted to business, but after the contests are concluded, we shall have a quieter trade. The orders for iron for home and foreign consumption, are tolerably numerous, and we hear of few complaints of underselling, which is said to have been going on amongst the makers of inferior qualities of iron. The question of prices has been mooted in several districts, and from what we can hear, there seems to be every probability that no alteration will be made in the rates for the ensuing quarter.

The Steel Trade is steady, and prices are maintained with firmness. We perceive that Mr. John Bedford of the firm of Bedford, Bury & Co., Regent Works, Sheffield, has received the gold medal of the French National Academy of Agriculture, Manufactures, and Commerce, for the excellent manufacture of his files. This is a high compliment to the house in question, and very gratifying to the ancient manufacturers' reputation, of Sheffield. A number of files of various sizes, cut by the French machine of Messrs. Prigent and Bernet, were recently exhibited in Sheffield, and generally approved. The patentee has disposed of the license to use it in France, and the object of exhibiting the file in Sheffield, was to induce a purchaser for a license to make them in this country.

The Coal Trade is steady, though we cannot describe it as generally active. The new branch railway from the main line of the Midland, a few hundred yards north of the Chesterfield station, has been completed, and will shortly be opened. It is a private line, which has been constructed by Messrs. Fowler of Sheffield, and is intended for the conveyance of coals from Whittington, and ultimately, from the intended collieries in the Barlow valley. The effect of making this short line, which is only about two miles in length, will be, to afford a good exit for a large quantity of coal, which was kept out of the market in consequence of the expense entailed upon it by carriage from Whittington to Chesterfield. The carriage of the coal was about 2s. 4d. per ton, whilst the cost by railway will not be above 4d., thus effecting a saving of 2s. per ton. With regard to the Yorkshire district, it is thought, that the recent calamity at Lund Hill, will prejudice future operations in the Barnsley seam, but we hope not. The facilities for the export of coals from South Yorkshire are now very great, and as the demand is increasing, we trust it may lead to a corresponding increase in production. Latterly, several gas companies in London have, for the first time, purchased the Silksome coal for gas purposes.

A melancholy gloom still hangs over the scene of the catastrophe at Lund Hill. The temperature in the shaft continues very high, and gives no satisfactory proof of the entire subsidence of the fire, and nobody will venture an assertion as to the probable time which may elapse before the bodies of the unfortunate men can be recovered, nor what time will be necessary to draw the water out of the pit, even with the most effective machinery. Another difficulty has presented itself with regard to a mode of outlet for the water, which it is believed, will require a strong disinfectant before it will be safe to raise it to the surface. The engineers will no doubt consult the best medical advice on this important subject.

We regret to state, that since our last, four of the persons injured by the late explosion at the Shipley colliery, near Derby, have died of their wounds. Their names are Joseph Fowkes, of Heanor; John Henshaw and Thomas Hart, of Ilkeston; and William Hand, of West Hallam, on each of whose bodies inquests have been held, and verdicts of accidental death returned.

A serious accident occurred, on Monday, at the Park Gate Colliery, near Rotherham; two of the miners, contrary to rules, entered their workings with a naked light, and thus fired the gas which had been accumulating since the Saturday previous. Both men were severely burned, and lie in a very precarious state. The colliery belongs to the Thorncliffe Iron-works Company.

On Friday, Mr. Henry Harrison, of Pemberton, proprietor of the Clay Gate Colliery, Wigan, was summoned before the magistrates, by Mr. Higson, the Government Inspector, for having neglected to fix a proper indicator to the shaft of his colliery, and also for not having a steam gauge at his engine. The cases were proved by Mr. Higson, who had warned the defendant to provide these things, but he had not done so, and he was fined 20s. and costs, on each of the two informations.

We have much gratification in stating, that the attention we have on several previous occasions drawn to the mineral wealth of Derbyshire, is likely to have a good result. Derbyshire possesses a monopoly in its marble quarries at Middle Peak, near Wirksworth, which have up to the present time been worked only to a limited extent by private enterprise. A company has now been formed under the Limited Liability Act, with a capital of 16,000*£*, in shares of 50*£* each to work the quarries, and we may observe, that a large portion of the capital is already subscribed. A very large profit must be made, and we should apprehend there can be no doubt about a remunerative dividend, as the quarries are now in good work, and the object of the company is but to increase the sphere of its operations.

The Eyam Mining Company are threatened with legal proceedings by the freeholders of Eyam, on the ground, we believe, that the company are getting ore under the village of Eyam, without paying any pecuniary consideration for the same.

We have little new matter to report with regard to the North Derbyshire Company's mines. At the Wren Park and Calverough the workmen are proceeding rapidly with the repairs, and no time is being sacrificed to put things in a working order. The shares are firm, and the shareholders generally appear quite satisfied with present prospects, as well as future anticipations. The shares in the different mines in Derbyshire, which are publicly dealt in, appear pretty much the same as last week, with the exception of the Eyam's, which are scarcely so firm, but they are still quoted at 3*£*. Notwithstanding the tightness of the money market, we have seen sufficient spirit manifested by the people in North Derbyshire to convince us that no legitimate mining undertaking need lack for the want of capital to support it. The Midland Mining Company, at Ashover, are not making much progress at present, though hopes are still entertained that the mine will be very productive. Lead continues to maintain its price, the last quotations being 22*£*. 10*s*. per ton for pigs, 2*£*. 4*s*. for sheets, and 2*£*. 10*s*. to 2*£*. 10*s*. for pipes.

#### STOCK, MINING, AND RAILWAY SHARES IN IRELAND. (FROM OUR CORRESPONDENT IN DUBLIN.)

MARCH 19.—The stock and share markets were very flat and inactive this week, but owing to prices coming over a shade better to-day, from London, a rally took place, and a considerable business was done. Acting on the belief that the Great Southern and Midland Great Western extension bills cannot be passed this year, the respective stocks have much advanced, and nearly recovered the recent fall. In mining shares, the market has been very steady, and it is hoped that the infusion of some new blood into the directorial system of the General Mining Company will tend to improve the condition of the property. Consols, 92*£*; National Bank, 33*£*; Royal Bank, 21*£*, ex div.; Consumers' Gas, 7*£*; General Mining Company, 2*£*; Mining Company of Ireland, 15*£*; Cork and Bandon, 10*£*; Dublin and Drogheada, 10*£*; Killarney Junction, 10*£*; Midland Great Western, 6*£*; Waterford and Kilkenny, 4*£*.

Dr. Gray, of this city, whose scientific acquirements are now so well known, and whose patented self-acting machine for the flushing of sewers has so beneficially contributed to the cleanliness and comfort of the inhabitants of workhouses, and other establishments where his invention

has been adopted, has just patented, in conjunction with Mr. T. Dillon, also of this city, a new railway carriage signal, which it is likely will soon become universally adopted, not only here, but in England and other countries; from the fact of its having elicited considerable admiration from all who witnessed its successful application on the Midland Great Western Railway a few days since, and especially from the engineers and managers, who are the most competent parties to judge of its merits. The following is an extract from the certificate sent the inventors by Mr. Cabey, the superintendent:—"On the down journey the signals were made from the state carriage to the engine, by one whistle, and exhibition of the semaphore, and in every case the steam was shut off, the engine reversed, and the break applied, within two seconds of the time the handle of the signal in the state carriage was turned. This result was obtained in different cases, when the speed of the train varied from five to fifty miles per hour. One of the great advantages of the system is, that the guard can give the communicating signal instantly and be free to attend to his breaks, or to take any other measures necessary—this is the great essential of any system of communication. The simplicity of the coupling joints, and the certainty with which any leakage can be prevented, are also desiderata." I hope in a short time to be able to give the particulars of the invention.

The annual meeting of the Dublin Chemical Society was held last evening, at the Royal Dublin Society House, and was more fully attended than on any previous occasion. The report entered fully into the proceedings of the society during the past year, and bore testimony to the great and increasing usefulness of the society's labours, in the promotion of a science, the knowledge of which, becomes now a matter of necessity, so many and varied are the manufactures requiring the aid of the chemist to bring them to perfection. It is not, however, necessary to descant on the advantages of a knowledge of chemistry, but it is pleasing to find so useful a society rearing a giant head, and that too, irrespective of governmental or other patronage, beyond that bestowed by members and students.

#### INDUSTRIAL PROGRESS ON THE CONTINENT.

(FROM OUR PARIS CORRESPONDENT.)

MARCH 19.—Since my last communication there have been no variations in prices that can be relied upon. Rumours are abundant, but I do not feel justified in forwarding them. Next week, however, I shall be in possession of the results of the late masters' meetings, which, it is stated, will be of interest. In the Charleroi market, a fair amount of business has been done, and negotiations are going on which will no doubt result in further contracts. The local journal states that ore is still very dull, the ironmasters living upon their stocks, and making no purchases. It is said that the Emperor of Russia's ukase, reducing the import duty upon several important articles, and amongst others upon iron, which will be admitted upon payment of 20 kopecks per pood, will be speedily promulgated.

A writer in one of the daily papers has just offered some remarks on the new metal, which, in spite of the somewhat flowery language in which they are clothed, may be of interest and service to your readers.

Unity and harmony of ideas—the combination of parts to form one whole, constitute a necessity which pervades all our actions, and especially when considered in relation to science. Analysis so slow, and oftentimes so laborious, has for its principal object to arrive at a wide synthesis; then the mind is satisfied, and is enabled to take repose in contemplation of its work. We are led into this train of thought by the anomalies of aluminium already partially described by M. Charles Thénard, who has distinguished himself by his successful study of this new metal. According to the classification adopted by Thénard in reference to metals, the metals that are least vulgarised by common use are found among those of greatest specific gravity, such as platinum, gold, mercury, and silver. Aluminium, on the contrary, which is only twice and a half heavier than water, is classified, on account of its density, among those metals that contain the most oxides, such as potash and soda.

Generally, metals the least commonly used are those which weigh the heaviest. This is the case with aluminium, which also resists, for the most part, the agents of destruction; indeed, one cannot help being struck by the wonderful contrasts presented by this metal; possessed of so little density, and yet combining in such a remarkable degree a durability so lasting, a degree of tenacity so extraordinary, and sonorousness so surprising. Aluminium, unlike those metals described as included under the fourth class of Thénard, is not decomposed by water, whilst it decomposes carbonic, boric, and silicic acids; and the impossibility of its oxide, alumina, being reduced by hydrogen, carbon, &c., warrants the belief that it should be placed amongst the metals of the fifth section, and rank with potash and soda.

On the other hand, if we consider that it decomposes all metallic oxides, with the exception of iron, we feel it ought to be raised still higher, and take its stand in a class which has no precedents, with the exception we have before stated. These different peculiarities, and its resistance to the action of oxides and sulphurates, its remarkable durability, which exists also in all its alloys, although so very malleable; all these characteristics combined, make aluminium a metal as remarkable for its rare qualities as for its adaptation to varied and manifold uses.

We learn that some scientific instruments constructed of aluminium are to be presented to the Society for the Encouragement of Science, by M. Loiseau, and among them are a sextant, and one of Pelletier's electrometers. It was found in the construction of these articles, that on account of the difficulty of soldering the new metal, an alloy of aluminium and tin had to be used.

The property of the Asturian Mining Company (Compagnie Minière et Métallurgique des Asturias), consisting of their mines, collieries, blast furnaces, and forges, were sold, on Tuesday, at the upset price of 85,000*£*, to M. Grimaldi.

The *Invention* says that there has recently been invented a mode of casting type with the same letter at each end, which it is supposed will be particularly applicable to daily journals printing large numbers. The compositor works exactly in the ordinary manner, but composes a double set of characters, which, placed in appropriate forms, are printed in a double-feeding platen machine, two sheets being thus printed at once, and one composition only being necessary.

#### GOVERNMENT SCHOOL OF MINES.

The lecture by Mr. Warington Smyth was on the "dressing of ores." This was a most important process in mining operations, and previous to his entering into the details, he would confine himself to some general remarks. Dressing was the sorting of the matrix from the metal or mineral, and was more or less employed in all mines. With regard to coal it was necessary to break from that the shale or iron-pyrites which was commonly left behind in the mine; that this was not always done effectually they knew necessary in the dressing of coal was hand picking. The dresser was a sort of midman; he had to receive the ore from the miner, and prepare it for the smelters. The amount of dressing was always to be determined on account of the quantity of ore to be got. Iron ore was generally found in large quantities, and almost in a pure condition; if it were not so it would not be much worth working. The crystalline iron ore was nearly free from admixtures. Some specimens of brown iron, interspersed through quartz, were then shown as unfit for dressing, on account of the cost of preparation. He next alluded to the dressing of lead, and several specimens were shown, in the one instance where the stone could be separated from the galena by a blow of the hammer, in others where it would be necessary that the whole should be buckled. Lead ore was generally required to be dressed to a very high pitch, a much as from 70 to 75 per cent. Copper ore were not obliged to be brought up to such a heavy percentage, the average produce of that being, in Cornwall, about 6 per cent. The being of a high price, the ore was required to be dressed to a greater state of purity. These ores were much disseminated throughout the stone, and the whole of the mass had often to be submitted to a process of reduction. With gold and silver greater care was taken, and this was invariably the case, as the metal being more precious, very small quantities would pay. In different countries the percentage differs; and in dressing operations much depends upon the management and cost of labour. With regard to iron ore, occasionally some of the smalls were jiggled in England, but on the Continent, in several countries, especially Sweden, this metal was very carefully prepared for the furnace. Lead varies very much in the ore; if this is argenticiferous it will pay well when 1*£* a ton to the fathoms is got. In South Wales sometimes as much as 2*£* tons of rough is picked over to extract 1*£* tons dressed. With regard to gold at the St. John del Rey Mine, where the produce is 2*£* oztas, or about 1*£* oz. per ton, the produce would make 25 ozs. to 50 tons. At Kremnitz, they get 3 ozs. to 50 tons; and at Salzberg and Tyrol 6 ozs., to the same quantity. Although there are always some remains in the schist, at Salzberg they go as low as 1 oz. to the 50 tons, though he did not mean to infer that this would pay. It was always a great advantage to select an eligible site for the dressing-floors; this should be on a gentle slope, so that the ore could be passed from one place to the other; this is sometimes not looked to; a spot as near the mine as convenient should be chosen. Before the ore was brought to surface, it should be saved as much as possible in the mine, as this would prevent re-picking, re-washing, and save haulage; and if thrown together, the dirt got mixed with the ore, and tended to deteriorate its quality; the lead should be left underground, in order to fill up the spaces. In Transylvania the tellurium and gold veins were generally left in a bulk, and afterwards taken out by particular individuals appointed for the purpose. The stones were in general brought from the mine in pieces large enough to be handled. In Mexico and Hungary, where the metal is in greenstone, clay adheres to the ore, and it is necessary that they should

be carefully washed, broken, and picked. There were some minerals which should not be treated with water, especially where they were pulverulent, such as the oxides of copper. In Hungary the ore was often dressed upon contract, and measured in a machine made for the purpose; a diagram of this was shown. In parts of Derbyshire and Nottinghamshire gratings were used, and the ore picked from the one to the other. In the quicksilver mines of Idrija, the gratings used were of different sizes; there would be one perhaps with bars of iron an inch apart, followed by another of 1*£* inch wide, and then with a third having fine wire interwoven. Dressing could be performed by old people, who were past labour, and young children; so that mines not only employed abig-bodied labourers, but a great number of others, who probably, if it were not for this resort, would have to seek parish relief, and this was one argument against the attempt to raise mines. The ores at the copper mines in the county of Wiskir were principally dressed by children. At a mine belonging to Messrs. Taylor, in Cheshire, the ore is delivered by a quantity of water, and a cylindrical gridiron employed; a diagram of this was shown, as well as several others descriptive of the various modes of dressing various minerals. Rittinger's conical barrel, with the assistance of a staff-wheel, would wash 5*£* tons daily. Great improvements had lately taken place in Austria. In general the ores were first spalled, and afterwards bucked or cobbed according to circumstances; and, although they were generally crushed on a plate of cast-iron, it was still commonly called a knock-stone. In many of the old workings, in Wales especially, stone hammers, much worn, were often found, and probably, in former times, these had been used to crush the ore or stones; in some places large pestles and mortars were used, the latter of a size nearly as large as the pestle, and were divided into three classes—prills, dredge, and hauva. The deads being denominated atle. In Derbyshire they had four sorts—bing ore, dashed work, cutting, and smiths; and the peculiarities of these were then described, and the lecturer concluded with some interesting remarks on their general properties.

On Tuesday, the lecture on Mineralogy, delivered by Mr. Warington Smyth, treated on "the blowpipe." The lecturer observed that the use of the blowpipe had long been known, and was anciently used by glass-blowers. It was, however, only towards the latter end of the last century that its first useful application was tried with metals—this was in Sweden, and Cronstedt had first drawn attention to it. Subsequently, it was greatly in practice, and may be said to have been perfected, by Borsig, whose useful work on that topic has been ably translated by Mr. Children. After his time, and even during his life, the subject was taken up by the Saxon mineralogists; and by it now the assayers were not only able to make quantitative, but likewise qualitative assays. They were particularly useful with regard to silver. The apparatus with which this was conducted was in so small a compass, that it became eminently useful, not only to the metallurgist, but likewise the miner and the traveller. Lead, Copper, and tin ores could be accurately tried, and correctly determined, by the aid of this instrument. Plattner had written on this a very valuable work, which had been translated by Dr. Sheridan Muspratt. There was a most valuable book he would also refer to, Scherer's *Manual of the Blowpipe*. This gentleman had been educated in Freiberg, was formerly professor of mineralogy in the University of Christiania. This had been translated by Mr. Henry Blandford, formerly a pupil of that school, now in India; another work had appeared from the pen of Von Kobell, a Bavarian metallurgist, which had been rendered into English by Campbell; this contained several tables, and was well worthy their attention. There is likewise another, by Chapman, which he would recommend to peruse, as it afforded much valuable information. Plattner's blowpipe was a trumpet mouth; the nozzle was either of German silver or platinum; the latter metal was always to be preferred. Dr. Black's blowpipe was then shown, as well as that of Dr. Woolaston; this last being in two pieces, which could be screwed together, and was extremely portable. Sometimes a common candle was used; but in general an oil lamp was preferred. The lecturer then practically showed how the name was to be directed. In the middle a slight blue flame could be observed; this was denominated the oxidising flame. It was necessary they should know how to guide this, or probably they would spoil the results; this is more especially the case with silver, as the oxidising flame is necessary to reduce the lead. Gas is sometimes used, but the oil lamp is more desirable. The test, or substance, has to be laid on charcoal; this should be well carbonised and free from roots. Abroad, they generally used pine and willow wood; in England, sometimes box was employed. Platinum was used as a holder where you wished to make experiments on the colour given to the glass, occasionally platinum foil; and for certain substances a spoon of that metal would be requisite. The glass-tube were generally manufactured of German silver at the heavy part; the upper part; the mineral is either detected by the colour or the deposit. Glasses with bulb were useful to detect cinnamon, metallic arsenic, and several other substances. A case was then shown, as used at Freiberg, containing the necessary reagents. These were carbonate of soda, borax, microsopic salt, silver, lime, paper, pyroxyd, oxide of nickel, oxide of copper, tin, a thin plate of silver, lime paper, and nitrate of cobalt; this last was extremely useful, and the difference between alumina and magnesia could be easily detected by it. Mr. Warington Smyth alluded to an instance where it had been employed in the detection of a deposit of white clay, nearly worthless, which had been first taken for meerschaum. To these were added an agate pestle and mortar, a steel hammer and anvil, a magnet and lens. It was requisite that the behaviour of the substance before the blowpipe should be noticed, as well as the different appearances of the various minerals, so as to see whether they decomposed or not. The colour of the mineral should likewise be noticed. Sometimes it gave out a smell like that of rotten herring. Plattner had always recommended that, before they commenced experiments using the blowpipe, they should lay down a clean sheet of cartridge paper, for by accident any of the particles of the mineral should fall off, it would leave a mark. In fact, those who were going to the colonies, or abroad for any lengthened period, in one of these cases fitted up, might be said to possess a complete assay laboratory. Several experiments were then shown by the blowpipe on different metals, and a "blown" arsenic always before the blowpipe threw out a peculiar garlicky odour; a "blown" tin always before the blowpipe threw out a peculiar odour; a "blown" lead always before the blowpipe threw out a peculiar odour; a "blown" silver always before the blowpipe threw out a peculiar odour; a "blown" gold always before the blowpipe threw out a peculiar odour; a "blown" copper always before the blowpipe threw out a peculiar odour; a "blown" zinc always before the blowpipe threw out a peculiar odour; a "blown" iron always before the blowpipe threw out a peculiar odour; a "blown" tin always before the blowpipe threw out a peculiar odour; a "blown" silver always before the blowpipe threw out a peculiar odour; a "blown" gold always before the blowpipe threw out a peculiar odour; a "blown" copper always before the blowpipe threw out a peculiar odour; a "blown" zinc always before the blowpipe threw out a peculiar odour; a "blown" iron always before the blowpipe threw out a peculiar odour; a "blown" tin always before the blowpipe threw out a peculiar odour; a "blown" silver always before the blowpipe threw out a peculiar odour; a "blown" gold always before the blowpipe threw out a peculiar odour; a "blown" copper always before the blowpipe threw out a peculiar odour; a "blown" zinc always before the blowpipe threw out a peculiar odour; a "blown" iron always before the blowpipe threw out a peculiar odour; a "blown" tin always before the blowpipe threw out a peculiar odour; a "blown" silver always before the blowpipe threw out a peculiar odour; a "blown" gold always before the blowpipe threw out a peculiar odour; a "blown" copper always before the blowpipe threw out a peculiar odour; a "blown" zinc always before the blowpipe threw out a peculiar odour; a "blown" iron always before the blowpipe threw out a peculiar odour; a "blown" tin always before the blowpipe threw out a peculiar odour; a "blown" silver always before the blowpipe threw out a peculiar odour; a "blown" gold always before the blowpipe threw out a peculiar odour; a "blown" copper always before the blowpipe threw out a peculiar odour; a "blown" zinc always before the blowpipe threw out a peculiar odour; a "blown" iron always before the blowpipe threw out a peculiar odour; a "blown" tin always before the blowpipe threw out a peculiar odour; a "blown" silver always before the blowpipe threw out a peculiar odour; a "blown" gold always before the blowpipe threw out a peculiar odour; a "blown" copper always before the blowpipe threw out a peculiar odour; a "blown" zinc always before the blowpipe threw out a peculiar odour; a "blown" iron always before the blowpipe threw out a peculiar odour; a "blown" tin always before the blowpipe threw out a peculiar odour; a "blown" silver always before the blowpipe threw out a peculiar odour; a "blown" gold always before the blowpipe threw out a peculiar odour; a "blown" copper always before the blowpipe threw out a peculiar odour; a "blown" zinc always before the blowpipe threw out a peculiar odour; a "blown" iron always before the blowpipe threw out a peculiar odour; a "blown" tin always before the blowpipe threw out a peculiar odour; a "blown" silver always before the

the change have been proposed. The sun is the only external source from which the earth derives any perceptible heat; but the heat thus received is rapidly diffused into space by radiation, and were it not for the obstruction presented to radiation by the atmosphere, the surface of the globe would be much cooler than it is. It has been supposed that the action of the sun's heat in former periods more powerful than at present, in consequence of the sun's orbit having become more circular, and its mean distance from the source of heat thus increased. According to the views of Sir John Herschel, the temperature of the earth might have been from this cause three per cent. greater in former geological periods than it now is. The difference, however, would not, as Mr. Phillips observed, be sufficient to account for the growth of tropical plants in this part of the globe. Sir Charles Lyell is of opinion that the difference of climate might be explained on the supposition that there was a much greater extent of dry land within the tropics, and a smaller quantity near the poles, the effect of which would be to increase considerably the temperature of all parts of the globe. Mr. Phillips calculated the increase of heat that would have been derived from such a distribution of the land, and arrived at the conclusion that it would not have been sufficient to account for the growth of tropical plants in northern latitudes. Another hypothesis connected with the variations in the state of the globe was, that the land was more elevated, but this would account for the globe being colder than at present instead of explaining the additional heat. The fact that there was a glacial period when icebergs, laden with the rocks from distant mountains, deposited their burdens on the lands of the temperate zone, then under water, is proved by the fragments of rocks similar to those found only in Norway, being scattered over various parts of England and of Central Europe. Mr. Phillips described at some length, by reference to present phenomena, the process by which glaciers from the mountains of Norway might have been extended in the fords on that coast, and being then broken off, floated as icebergs laden with debris from the rocks to the south. After noticing the various hypotheses accounting for variations in the state of the globe, Mr. Phillips said that none of them satisfactorily explained the high temperature of the globe indicated by tropical vegetation in the temperate zone, and we must look for a solution of the problem to the internal heat of the earth, which subject he should consider in the next lecture.

## BRISTOL MINING SCHOOL.

Mr. G. C. Greenwell gave his first lecture on Ventilation on Monday. He observed that the air in mines was vitiated by the liberation of carbonic acid and hydrogen gases from the strata, by the combustion of lights, the respiration and perspiration of the miners and horses, the decomposition of animal and vegetable matter, and the absorption of oxygen by some of the minerals. Most of the explosions in mines arose from deficient ventilation. It was found that men required about half a cubic foot of atmospheric air per minute, but such considerable variations in temperature and quantity, it was necessary that not less than 300 cubic feet per minute for each man and boy should be passed through the workings. The effect of furnace ventilation was then noticed. Furnaces were, in their first application, placed at the bottom of large chimneys at the surface, until it was suggested that the whole length of the shaft might be used as a chimney, and consequently, the furnace was placed at the bottom of the upcast shaft. Natural ventilation depended on the difference of rarefaction in the columns of air in the respective shafts. The variation of temperature was perceptible at some distance below the surface, at which distance the temperature of the air was known to be equal to the average temperature at the surface during a whole year; so that in winter the column of air in the deepest shaft would be considerably heavier than that in the shallower, whilst in summer the change conversely would gradually, by frequent oscillations, cause a complete stagnation. If the airways were sufficiently large, the effect on the ventilating current, by opening doors in galleries communicating directly with downcast and upcast shafts, was not so great as most people imagined. This, of course, depended very materially on the effect of friction, and other causes, consequent on the length of the airways and the size of the upcast. Mr. Greenwell had prepared a very ingenious model with a transparency in the farthest extremity from the two shafts, through which a wax taper could be seen burning; and the effect of opening and shutting a door in a passage communicating directly with the two shafts was plainly seen by the flame of the taper, the circulation of air being caused by a spirit lamp placed at the bottom of the upcast shaft. By this model, the effect of constricting the area of the upcast shaft was shown to evidently lessen the quantity of the circulating current of air; hence the necessity of large airways, and the upcast shaft being equal, if not greater, in area than that of the downcast. The lecturer remarked that carbonic acid gas was sometimes given off in considerable quantities from old workings; when one-tenth of this was the proportion of its combustion with air, light would be extinguished, and although men could live in an atmosphere containing a much greater quantity, they ought never to be allowed to work where flame could not live, as it was not then easily ascertainable what quantity there might be. When a small proportion of carburetted hydrogen was in combination with the air, the flame of the lamp or candle would be elongated; when in a very large proportion, they would burn with a pale blue flame; and when in the proportion of one-eighth or one-ninth, the mixture was explosive in the highest degree. Those who had not seen carburetted hydrogen in mines might easily collect it by inverting a bottle in a stagnant pool, and disturbing the decomposed vegetable matter at the bottom, from which it would then rise, and fill the bottle. Mr. Greenwell showed by experiment the effect of carbonic acid gas on flame, and noticed the results of experiments he had made at Haswell and other collieries on carburetted hydrogen. In conclusion, he observed that the two great points in ventilation were to have large airways and large upcast shafts.

## WEEKLY LIST OF NEW PATENTS.

GRANTS OF PROVISIONAL PROTECTION FOR SIX MONTHS.—J. HASSWELL, Vienna: Improvements in the construction of railway carriages, which improvements are also applicable to locomotive steam-engines.—W. E. NEWTON, Chancery-lane: Machinery for cutting metals and other hard substances.—L. WILKS, Bedford-row: Apparatus for signalling between the guards and engine-drivers on railway trains, which is also applicable to other similar purposes.—G. HARDART, Sketty Colliery, near Mansfield: Apparatus for actuating and applying the breaks of carriages used on railway trains, and for coupling such carriages.—H. T. HALYEA, Ryde: Construction of bridges and arched structures.—J. KIRKHAM, Tonbridge-place, New-road: Construction of furnaces, ovens, or kilns, for drying, baking, or burning pottery or earthenware, bricks, tiles, or other similar articles, and in the means of collecting and condensing or carrying off the smoke, gases, or vapours evolved from such or other furnaces or fireplaces, or that escape or arise from the retorts and other parts of the apparatus used in the manufacture of gas.—J. SPENCE, Brixton-road: Manufacture of artificial coral.—J. HOY, Islington: Apparatus for distributing sand on railway wheels.—W. WILKINSON, Nottingham: Lighting and lamps.—A. V. NEWTON, Chancery-lane: Springs for railroad carriages and other uses.—F. STUBBS, Bawtry: Propelling vessels.—C. W. HARRISON, Woolwich: Obtaining light by electricity.—H. W. TYLER, Norfolk-crescent, Hyde Park: Permanent way of railways.—J. MURPHY, Newport: Securing screw nuts on their bolts, and bolts in plates.—E. F. JONES, Redcar: Manufacture of pig and bar-iron.—C. PAUVERT, Chatteleurault: Manufacturing iron; also, Manufacturing steel and cast-steel.—E. LINDNER, New York, U.S.: Cartridges and bullets, and an apparatus for producing the same.—G. W. DRAKE, Tinsley, near Sheffield: Tilting iron and steel or any other malleable substance by perpendicular motion.—W. MUIR, Glasgow: Generating steam for marine purposes.—H. GREGG, New Palace Yard, Westminster: Mode of coupling or connecting pipes, columns, and conduits, in the machinery for manufacturing the hoops to be used in connecting such pipes, columns, and conduits, and in the shape of such pipes, columns, and conduits, whereby they become adapted for the support and conveyance of vehicles.—G. BOWER, St. Neots, Huntingdon: Apparatus for manufacturing gas.—W. TRAVIS, Crompton: Furnaces.—S. SUTCLIFFE, J. STOCKS, Manningham: Means or apparatus in connection with steam-boiler and other furnaces to facilitate the consumption of smoke therein.—R. M. ORDAIN, Regent's Park: Suspension bridges.—J. PARKER, Westminster: Apparatus for locomotive purposes.—G. A. TABOURIN, Lyons: Rotative engine.—C. SHAW, Birmingham: Improved manufacture of ship's thimbles and other metallic fittings used for rigging and sails and rope gearing in general.—H. R. SMITH, Wellingborough: Manufacturing and purifying gas made from coal and other bituminous substances for illumination.—A. KNOX, Mile End: Gas regulator.

RAILWAY WHEELS.—Mr. W. Paton, Spring Vale, Glasgow, proposes to construct railway wheels composed of metal and wood combined, so as to be both durable and pleasant in working. In one modification of railway wheel, made according to this invention, the nave and arms or spokes are of wrought-iron, forged in one piece. The arms are flat, and the rim portions which they carry for receiving the tyre are formed with deep external flanges on one side; these edge flanges are on the side on which the tyre flange is ultimately to be placed, and with the circumferential rim portions they form a recess for a wooden rim or fellos portion which encircles the rim portions of the spokes. This wooden fellos portion is retained in position by transverse bolts, passed through the wood and through the edge flange of the fellos rim portion. The wood being put on in pieces, is clamped and bound up by an iron hoop, which is shrunk on outside the wood. The actual running tire, which is formed with a short edge flange on its inner plain edge, is then put on over the binding hoop, and this completes the wheel. The inside edge flange on the tire protects the tire from the lateral blows arising during running, and the whole forms a substantial and useful wheel. According to another modification, the nave and arms are of cast-iron, but the wood is interposed at the fellos portion in the manner before described.

MOTIVE POWER.—Mr. Petzschler, Manchester, proposes to obtain motive power by the application of the principle of gravitation. He employs an arrangement known as internal spur or toothed gearing (that is, an inner spur wheel gearing into an outer rim which has teeth and side spaces formed upon its inner surface), and each rotating upon its own centre (that is, not quite concentric with each other). A series of these wheels may be placed loosely upon a stationary shaft, upon which a heavy weight is fixed, the gravitating centre of which being somewhat eccentric, the downward pressure of the shaft (caused by the gravitating force of the weight) upon the inner spur wheel will cause the under side of its teeth to exert a pressing force upon the upper side of the internal teeth of the outer wheel upon one side of the centre, thus forcing the teeth of one side of the outer wheel down and carrying the wheel round; then upon the opposite side of the centre this action is reversed (this is, the upper part of the teeth of the inner spur wheel pass against the lower side of the internal teeth), thus lifting or raising this side of the wheel, and assisting in causing it to rotate. By connecting the toothed periphery of the outer wheel to any train of gearing any motive power required may be driven or actuated by it.

ELECTRIC TELEGRAPH.—In our last Journal we stated that Dr. Bernstein, of Berlin, had patented an invention for transmitting telegraphic communications in the same direction, or in contrary directions, at the same time, upon one wire; and we now find that Mr. Wesson, an American, has succeeded in adapting any electric telegraph to transmit communications between railroad trains, canal boats, and all vehicles moving in an unvarying or slightly varying track. The invention consists in constructing the stationary line of a series of immovable and interposed moveable conductors, and furnishing the vehicle with a circuit breaker, circuit receivers and conductors, so that the vehicle becomes a moveable telegraph office.

MALLEABLE IRON DIRECT FROM THE ORE.—In the *Mining Journal* of Feb. 28, we noticed the invention of Mr. M. S. Salter, of New Jersey, U.S., for manufacturing malleable iron direct from the ore, by the employment of three chambers, one above the other, and it appears that the process has been really practically tested at Mont Haven, New York, and proved successful. Writing upon the subject, Mr. Salter reminds those who are making such unaccountable discoveries, that the grand distinction between wrought and cast-iron "consists in the property of tenacity, which the former possesses in a greater degree than any other metal, while cast-iron is brittle. Wrought-iron is fibrous, while cast-iron is destitute of fibre. Wrought-

iron is exceedingly infusible, requiring a heat of 150° of Wedgwood's pyrometer (more than 20,000° Fahr.) to melt it, whilst cast-iron fuses readily at a full red heat. The malleability of wrought-iron increases up to the point indicated by the pyrometer of Wedgwood, without impairing its tenacity; hence its inestimable value."

LONDON GENERAL OMNIBUS COMPANY.—The traffic receipts for the week ending March 14 were 10,025, 19s.

RAISSESSAC AND BEZIERS RAILWAY COMPANY.—The shareholders are hereby informed that the COUPON OF INTEREST, due the 5th April next, will be PAID after that period.—In Paris, at the office of the company, 45, Rue Talbaut.

In London, at Messrs. C. Devaux and Co., 62, King William-street, City.

London, March 16, 1857.

TO CAPITALISTS, AND OTHERS INTERESTED IN MINING.—To be sold, or worked in company, an extensive and RICH GOLD FIELD, having a plentiful supply of water and timber; in an excellent climate, situated in New Granada, South America, which has cost the owner thereof £25,000 sterling. A working capital of £500 will put the property in full order, and make the first washout! This being a bona fide concern applicants will please give proper addresses, without which no notice will be taken. Address "Pagarita," *Mining Journal* Office, 26, Fleet-street, London.

LEATHER MILL BANDS, HOSE PIPES, BUCKETS, &c.—RAILWAY COMPANIES, ENGINEERS, CONTRACTORS, and BUILDERS, can be SUPPLIED with the above articles of the very best quality, and on the shortest notice. PUMP BUTTS, and every other description of leather always on hand. Apply to J. HOLGATE and Co., curriers and leather merchants, 33, Great Dover-road, London, S.E. WHOLESALe HARNESS MANUFACTURERS.

RAILWAY WAGONS.—TO BE LET, on reasonable terms, a QUANTITY of 6 tons RAILWAY WAGONS.—For particulars, apply to Mr. THOS. NURSE, Wellington Chambers, Cannon-street West, London.

GRAT CRINNIS MINING COMPANY.—Notice is hereby given, that a CALL of ONE SHILLING per share, on the NEW SHARES of this company, has been made, payable on Tuesday, the 31st March inst., at the offices of the company, 47, Old Broad-street, London.

By order of the Committee, R. C. MANUEL, Sec.

47, Old Broad-street, London, March 19, 1857.

TAMAR SILVER LEAD MINING COMPANY.—Notice is hereby given, that a SPECIAL GENERAL MEETING of shareholders in this company will be HELD at the offices of the company, 17, Gresham-street East, London, on Tuesday, the 24th day of March next, at Two o'clock precisely.

By order of the Board, F. GEORGE, Sec.

Dated this 24th day of February, 1857.

TRELEIGH CONSOLIDATED MINING COMPANY.—Notice is hereby given, that the ADJOURNED MEETING, called for Tuesday, the 24th inst., was FURTHER ADJOURNED until Thursday, the 26th day of March next, at Two o'clock precisely.

WM. NICHOLSON, Sec.

57, Old Broad-street, London, Feb. 18, 1857.

LAJARES LEAD MINING COMPANY.—Notice is hereby given, that, in conformity with the Deed of Settlement, the HALF-YEARLY GENERAL MEETING of the shareholders in this company will be HELD at the London Tavern, Bishopsgate-street, on Tuesday, the 31st inst., at Twelve o'clock, to receive the accounts and balance-sheet, with reports from the directors and auditors, for the half-year ending 31st December, 1856; to elect three directors in the place of James Crosby, W. Coz, and W. L. Lowndes, Esqrs., who go out of office by rotation, but who are eligible, and offer themselves for re-election; to appoint two auditors for the ensuing year, Thomas Coxhead and Henry Blackly, Esqrs., are eligible, and again offer themselves for re-election; and for general business, as authorised by the Deed of Settlement.

By order of the Board, J. B. COLOGAN, Sec.

5, Queen-street-place, Upper Thames-street, London. Dated March 17, 1857.

NEW GRANADA COMPANY.—Notice is hereby given, that the FIFTH ORDINARY GENERAL MEETING of the company will be HELD at the offices of the company, 6, Adam's-court, Old Broad-street, on Tuesday, the 31st inst., at One o'clock in the afternoon precisely, for the purpose of submitting the accounts, balance-sheet, and reports of the directors and auditors, for the year ending 31st December last, to the shareholders for approval.

On this occasion, Charles Johnston, Esq., and George Knight Huxley, Esq., retire by rotation from the direction, and offer themselves for re-election.

The meeting will also have to elect two auditors for the ensuing year; and transact such other business as is appointed by the Deed of Settlement to be transacted at ordinary meetings of the said company.

By order of the Board, GEORGE E. BREFFIT, Sec.

6, Adam's-court, Old Broad-street, March 18, 1857.

THE LUSITANIAN MINING COMPANY (LIMITED).—Notice is hereby given, that, in accordance with the Deed of Settlement, the THIRD ANNUAL GENERAL MEETING of shareholders in this company will be HELD at the offices of the company, 5, Queen-street-place, Upper Thames-street, London, on Wednesday, the 1st day of April next, at Half-past Twelve o'clock precisely, to receive the report and accounts for the year ending 31st December, 1856. Also, to elect four directors, in the place of Manuel Perez Lozano, Esq.; Jose Maria Perez, Esq.; John Taylor, jun., Esq.; and Richard Taylor, Esq.; who go out of office by rotation, but who are eligible, and offer themselves for re-election. And also to appoint an auditor, in the place of John White Cater, Esq., who has resigned.

London, March 18, 1857.

By order of the Board, W. A. HART, Sec.

Office of the Company, 34, Lime-street, London, March 18, 1857.

CORT'S TESTIMONIAL FUND COMMITTEE.

REV. JAMES BOOTH, LL.D., F.R.S.—CHAIRMAN.

WILLIAM B. CARPENTER, M.D., F.R.S., F.G.S.

EDWARD SOLLY, Esq., F.R.S.

EDWARD REA, Esq., F.S.A.

SUBSCRIPTION LIST.

From the Royal Bounty Fund, by Lord Palmerston	£60 0 0
Anthony Hill, Esq., Plymouth Works, Wales	30 0 0
George A. Crowder, Esq., Carlton House Terrace	25 0 0
Ebbw Vale Iron Company	20 0 0
Robert Stephenson, Esq., M.P., F.R.S.	15 0 0
J. K. Brunel, Esq., F.R.S.	15 0 0
James Stephen Wickens, Esq.	15 0 0
Blaina Coalbrook Dale Iron Company	15 0 0
Marquis of Lansdowne, F.R.S.	10 10 0
Miss Bardsell Coutts	10 0 0
Richard Fothergill, Esq., Aberdare Ironworks	10 0 0
Rhymney Iron Company	10 0 0
R. W. Kennard, Esq., Blaenavon Iron Company	10 0 0
W. Foreman, Esq., F. y. darran Iron Company	10 0 0
Philip Williams and Son, Wednesbury Oak Ironworks	10 0 0
John Dawes and Sons, Bromford Ironworks	10 0 0
J. H. Blackwall, Esq., Ironworks, Dudley	10 0 0
John Bradly and Co. per W. O. Foster, Stourbridge	10 0 0
G. Thorneycroft and Co. Ironworks, Wolverhampton	10 0 0
Barrow and Hall, Bloomfield Ironworks	10 0 0
Coalbrook Dale Iron Company, Shropshire	10 0 0
Milner and Son, Iron Safe Works, Liverpool	10 0 0
G. Bessemer, Esq.	10 0 0
Samuel Brown, Esq., Clifton Hall	10 0 0
Maudslay and Field	10 0 0
William Matthews, Esq., Corby Hall Iron Works	5 0 0
W. and G. Fosters, Ironworks, Stourbridge	5 0 0
Brymbo Iron Company, Denbighshire	5 0 0
Derwent Iron Company, Neth	5 0 0
John Knight and Co. Cookley Ironworks, Kidderminster	5 0 0
W. B. Cochran and Co. Ironworks, Woodside	5 0 0
Horton and Son, engineers	5 0 0
Ranson and Sims, Ipswich	5 0 0
Clayton and Shuttleworth, engineers	5 0 0
Samuda Brothers	5 0 0
J. C. Ravenhill	5 0 0
Easton and Amos	5 0 0
Daniel and Co. Thames-street	5 0 0
Executors of the late James Meadows Rendel, F.R.S.	5 0 0
Robert Vaughan, Esq., M.P., Secretary to the Law Institution	5 0 0
Charles Sanderson, Esq., Sheffield	5 0 0
Henry E. Hoole, Esq., Sheffield	5 0 0
William Fairbairn, Esq., F.R.S.	5 0 0
R. Middleton, Esq., <i>Mining Journal</i>	5 0 0
Subscriptions payable at the banking house of Sir John W. Lubbock, Bart.	5 0 0

TO THE IRON MANUFACTURING, MINING, AND ENGINEERING INTERESTS.

GENTLEMEN.—I have to request that you will allow me to add the name of your firm to the above list to defray the expenses of an appeal to Parliament, for some adequate national compensation for the inventions of Henry Cort, which have enabled the manufacturing and engineering classes in Great Britain to contribute so largely to the wealth and power of the nation.—I am, respectfully, gentlemen, your most obedient servant.

RICHARD CORT.

*Mining Journal* Office, 26, Fleet-street, London, March 10, 1857.</p

## GREAT WHEAL NEPTUNE COPPER MINE, MARAZION, CORNWALL.—Capital, £15,000, in 6000 shares of £2 10s. each.

Deposit, or first payment, £1 5s. per share.

Applications for shares to be forwarded to the purser, in the form annexed. Committee of management to be chosen by the shareholders, and the mine to be conducted under the most approved mining rules and regulations.

PURSER.—A. BENNETT, Marazion, Cornwall.

BANKERS.—Messrs. Bolitho and Co., Falmouth.

This mine is situated in the parish of Perran Uthoe, and comprises a very extensive seat, which is upwards of a mile in length, on the course of several lodes, and has been granted to the promoters by the lords over whose lands it extends at 1-18th dues, or royalty, for the terms of twenty-one years, and upon the usual conditions.

The following facts are deemed ample evidence that the mine is of great value, and one from which extraordinary results may be reasonably expected; and it is offered to the public in order that it may forthwith be set again to work.

About the year 1810, the principal lode in the mine was discovered by an adit commenced from the cliff, and in less than twelve months afterwards, with an outlay of only about £2000, it paid large profits out of the ore raised from this lode only—a remarkable circumstance in mining.

During the time the mine worked, a period of somewhere about ten years, the returns of ore from the before-mentioned lode, amounting to from £350,000 to £400,000, out of which the adventurers received large dividends, notwithstanding the standard of copper was only about two-thirds of what it is at present, and had been for some time past—and the dues were then double what they now are.

The mine was suspended, or partially so, in or about 1820, in consequence of disputes between the shareholders and one of the then lords (whose successor has shown his desire to encourage the adventure by granting mining rights in his lands), which ended in a chancery suit, and eventually caused the mine to be abandoned; and it has since remained idle on account of difficulties in procuring the grants.

The ore returned from this mine was of the very richest quality, and had that peculiar character for ductility in the metal it produced which makes ores of that nature now so much desired and sought after by smelters, by reason of the disproportion of ores of an opposite kind.

The adit and several shafts have already been cleared up, and are now fit for immediate operations; and what has been done towards opening and developing the mine, with a view to resuming the working of it, would take at least three years to accomplish, and an outlay of several thousand pounds.

The company will have the benefit of all which has been done in the mine, together with the grants, for £300.

The promoters estimate that in a very short time, with a comparatively trifling outlay, and good management, the mine may be brought into a state of productivity, as a considerable quantity of ore ground remains to be taken away on tribute, as well as the adit is completed.

It may be added that this mine adjoins Wheal Charlotte, and Tolvaoden Mines, in which very valuable discoveries have recently been made, also, that it is only about two miles from the shipping port of St. Michael's Mount, which will make the carriage of ore very trifling.

## FORM OF APPLICATION FOR SHARES.

To the Promoters of the Great Wheal Neptune Copper Mining Company.

GENTLEMEN.—I hereby request you to allot to me shares in this adventure, which, or any less number that may be allotted to me, I hereby agree to accept; and I also agree immediately thereto upon to pay the deposit, or first payment, of £1 5s. per share to the bankers or purser of the company, and to conform to and be bound by the rules and regulations of the company, and to subscribe thereto, if required.

Dated the day of 1857.

Name in full.....

Address.....

Profession or occupation.....

NORTH OF INDIA TRAMROAD COMPANY (LIMITED). For introducing a cheap system of communication throughout the Province of Rohilkund and adjacent territory, connecting the Ganges with the Indus, and also with the iron districts of Kumaon and Gurkha, via Fetterghur, Shahjehanpoor, Bareilly, Rampur, Moradabad, Meerut, Searupoor, Umballah, Loodheana, and Uniratir.—To be incorporated under the Joint-Stock Companies Act, 1856.

Capital, £1,000,000, in 50,000 shares of £20 each, with power to increase.

Deposit, 2s. per share.

No call will be made until a guaranteed rate of interest has been obtained from the East India Company on the required capital.

DIRECTORS.

W. P. ANDREW, Esq., Chairman of the Seinde Railway Co.—CHAIRMAN. Sir H. ADDOKE, M.P., late Deputy-Governor of Bengal—DEPUTY-CHAIRMAN. PHILIP ANSTRUTHER, Esq., Director of the Bank of Egypt. HARRY BORADAILE, Esq., Director of the Seinde and Punjab Railway Cos. THOS. BRADSHAW, Esq., Chairman of the London and Continental Insurance Co. W. F. FERGUSON, Esq., Eastern Bengal Railway Company. C. G. GLOASFORD, late Executive Engineer of Rohilkund.

C. GRENVILLE MANSEL, Esq., late Member of Board of Administration, Punjab. G. GORDON MACPHERSON, Esq., Director of the Agra and United Service Bank. W. SHILLITO, Esq., H.E.I.C. Bengal Establishment. E. WARNER, Esq., M.P., Grosvenor-place, Director of National Discount Company. J. W. WILLIAMSON, Esq., Chairman of the National Savings Bank.

(With power to add to their number.)

CONSULTING ENGINEER—John Murray, Esq., C.E.

ACTING ENGINEER IN INDIA—W. Sowerby, Esq., C.E.

SOLICITORS—Messrs. Lyons, Barnes, and Ellis; Messrs. Marten, Thomas, and Hollams.

BANKERS—Messrs. Smith, Payne, and Smith; the Agra and United Service Bank.

SECRETARY—George L. Browne, Esq.

## TEMPORARY OFFICES, 6 ADAMS COURT, OLD BROAD STREET.

The object of this company is the introduction of a system of tramroads into the most fertile and populous districts of Northern India, commencing at the station of Fetterghur, and running thence through the provinces of Rohilkund, the "Garden of India" containing a population of above 300 persons to the square mile.

From Fetterghur it will proceed in a northerly direction to Shahjehanpoor, and thence to Bareilly, the capital of Rohilkund, with a branch to Pilibhit, and ultimately to Bareilly, at the foot of the Himalayas, where the merchants of Nepal, Tibet, and Chinese Tartary, meet those of Upper and Lower India, for the exchange of their commodities.

From Bareilly the line will continue in a westerly direction to Rampur and Moradabad, and thence to Meerut, and ultimately to Delhi.

The importance of this line will be best understood from the fact that it has already been examined and reported on by the Deputy-Consulting Engineer to the Government of India, Captain Yule, and its construction urged by the authorities of the province. In reference to this, Captain Yule says in his report, "A complete line of railway, extending from Shahjehanpoor, would then connect, in a space of 170 miles, the town of Shahjehanpoor (with a population of 75,000), Bareilly (12,000), Rampur (probably 30,000), Moradabad (60,000), Umrakha (35,000), Meerut (40,000), and 40 miles further, Delhi (120,000)—a string of populous places which is rarely to be found in the same compass."

Subsequently, it is proposed to extend it in a north-westerly direction by way of Moosufrunger and Saharpoor to the great military station of Umballah, with a branch by the Government works at Roopur to Hurdwar, the Nishni, Nogorod of India. At the celebrated fair of Hurdwar merchants congregate, not only from every part of India, but from the most distant parts of Central and Northern Asia, and in such crowds that the number of visitors is estimated, at times, to equal the population of London. The line to Hurdwar would also be the great communication between India and the western part of Thibet, as well as an outlet for the tea of Dehra Doon, and the timber of the lower Himalayas. From Umballah, the line will continue north-west through Loodheana to Uniratir, where it will join the Punjab Railway: thus connecting the railway systems of the Indus and the Ganges.

Southward from Shahjehanpoor, should it eventually be deemed desirable by the authorities, the line would run through the recently acquired territory of Oude *sia* Lucknow to Benares, where the Ganges is permanently deep, and capable of floating powerful steamers, even in the driest seasons, down to Rajmahal. Thus, an alternative line would be offered for the conveyance of troops and stores to the north-west frontier, a strategic advantage of which it is difficult to exaggerate the political importance.

Such portions of the line as are required for heavy traffic will be formed of a substantial character. It has been estimated that the cost of constructing no portion will exceed £5000 per mile, and a large portion will not exceed one-half that amount.

The first portion of the line intended to be constructed will be about 250 miles—namely, from Fetterghur to Delhi via Shahjehanpoor, Bareilly, and Moradabad. For the completion of this section the estimated capital will be sufficient.

The system intended to be introduced will be more suitable to the actual requirements of the country than lines costing £9000 to £10,000 per mile. The present rate of traveling in India by camels and carts seldom amounts to 80 miles per week. If, therefore, 80 miles per day can be accomplished, it is obvious how great a boon will be conferred upon India. Of such a system this line would be not only the model, but the fruitful parent. By establishing a connection with the iron districts, and by its inexpensive construction developing local traffic in parts unfitted for more costly works, it would not only act as a most important and liberal feeder to the lines already in course of construction, but bring down to them, at a cheap rate, much of the material so indispensable for their speedy completion.

Animal power will be employed in the first instance, until the traffic becomes more developed. "A horse," says Capt. Yule, "can draw at least eight times as much gross weight on a level railway as it can on a level turnpike-road." But as the traffic increases, light locomotives may be used, with a moderate speed. Some portions of the line, however, will be adapted for light locomotives from the commencement.

The constructions of the tramroad will be rendered very cheap by reason of the facility for drawing timber in any quantity from the adjacent forests at the foot of the Himalayas, and ultimately the company expect to obtain a large portion of their iron for rails, at a reduction of one-half the present cost, from the recently discovered iron mines of Kumaon, where ironworks have been already commenced. But the estimates for the line have in the mean time been based upon the supposition that the iron will have to be brought out from England.

The company hope to complete the line, recommended by the deputy consulting engineer to the Government of India, from Fetterghur through Shahjehanpoor, Bareilly, Rampur, Moradabad, and Meerut, to Delhi, in about three or four years from the time of obtaining the sanction of the authorities.

No deed is required to be signed until the concession, with the guaranteed rate of interest on the capital, has been obtained from the Hon. East India Company.

## FORM OF APPLICATION FOR SHARES.

To the Directors of the North of India Tramroad Company (Limited).

I request you will allot to me shares in the capital of the above-named company, and I hereby engage to accept the same, or any less number, on the terms of the prospectus.

Reference.....

Name (in full).....

Occupation.....

Address and date.....

MESSRS. FULLER AND CO., 51, THREADNEEDLE STREET, LONDON, continue to TRANSACT BUSINESS IN BANKING, MINING (both English and Foreign), RAILWAY, and every description of SECURITIES; and are in a position to BUY AND SELL AT THE MARKET PRICE OF THE DAY.

The present favourable opportunity to capitalists command especial attention to mines, which are paying continuous dividends of from 15 to 25 per cent. Those of a progressive character, judiciously selected, frequently rising in value 50 per cent, and upwards.

WANTED.—Alfred Consols, Bedford United, Condurrow, Devon Great Consols, Gonsalena, Hington Down, Great Wheal Vor, Rhoesydol, Providence, South Bog, South Caradon, South Wh. Frances, Wh. Trelawny, Mary Ann, West Nant-y-Mwyn.

FOR SALE.—Bedford Consols, Drake Walls, Dwyngwn, Cilgwyn and Wentworth, Calstock Consols, Craddock Moor, East Baswell, Gawton, Lady Bertha, Wh. Edward, West Russell, West Caradon. Office hours from Ten till Five o'clock.

## THE COURT OF VICE-WARDEN OF THE STANNARIES.—STANNARIES OF CORNWALL.

## IN THE CAUSE OF MILLET AND ANOTHER v. ANGOVE.

NOTICE IS HEREBY GIVEN, that, pursuant to an ORDER, or

DECREE, made in the above-mentioned Cause, and bearing date the 5th day

of January last, a PUBLIC AUCTION will be HELD at WHEAL NELSON MINE,

in the parish of Camborne, within the said STANNARIES, on Thursday, the 26th day of

March inst., at Twelve o'clock noon, for SELLING, either together or in lots, the

aforementioned MINING MACHINERY, MATERIALS, and OTHER EFFECTS:

1 22 in. cylinder engine.

1 boiler, 10 tons.

1 capstan, 1 shears.

2 2 horse whimes.

44 fms. 11 in. ploughing-lift.

15 fms. 5 in. ploughing-lift.

12 fms. 10 in. drawing-lift.

16 fms. 6 in. drawing-lift.

60 fms. 8 in. main rods.

2 balance-bobs.

1 smiths' bellows, 1 anvil, 1 vice, 1 vise and

screw stock, about 3 cwt. smiths' tools, 1 winch.

2 pairs beams and scales, ½ cwt. brass

150 fms. horse-whim kibbles.

60 fms. capstan-chain.

4 horse-whim kibbles.

6 hand and wheelbarrows.

40 cwt. tallow; 12 gallons rape oil; 60 powder cans; 1 cwt. powder; 20 coils safety

wire; 70 lbs. candles; 10 of old rope; about 2 cwt. steel; about 100 ft. balk timber;

1 tram wagon, and 15 fms. tramway; 180 fms. ladders; shovels and pick hammers; car-

penter's bench; grindstone; miners' chests; miners' tools; a quantity of new and old iron; and a variety of other materials and effects.

For viewing the same, application may be made to Mr. WILLIAM TOWBIN, the officer

in possession on the mine; and for further particulars, to Messrs. RODD, DARKE, and

CORNISH, solicitors, Falmouth; or to Messrs. HONOR and HOCKIN, solicitors, Truro.

Dated Registrar's Office, Truro, March 14, 1857.

## IN RE ROYAL BRITISH BANK.

MESSRS. FULLER AND HORSEY are instructed by the Assignees

to SELL, BY AUCTION, at the Wyndham Arms Hotel, Bridgend, Glamor-

ganshire, on Saturday, the 4th April, 1857, at Three o'clock precisely, without any

reserve, THREE WROUGHT-IRON CORNISH STEAM BOILERS, each 28 feet

long, 9 ft. 6 in. diameter, with 4 ft. tapering tubes, 4 in. safety valves, 10 ft. flanged

steam valves, and furnace work, in excellent condition; lying at the Garth Iron-

works, in the Llynvi Valley, a few miles from Bridgend. May be seen at any time

previous to the sale.

Catalogues may be had at the Wyndham Arms, Bridgend; at the Castle Hotel,

Swansea; at the Angel, Cardiff; and of Messrs. FULLER and HORSEY, Billiter-street.

London. E.C.

## EXETER.—TO IRONFOUNDERS.

MESSRS. WARE AND SON have received instructions from the

Executors of the late Mr. James Northam to SELL, BY AUCTION, at the

Half Moon Hotel, on Tuesday, the 14th day of April next, at Three o'clock in the

afternoon, in One Lot, all that well-known and old-established IRON FOUNDRY,

Exeter, with the DWELLING-HOUSE and FOUR COTTAGES adjoining, STOCK-  
IN-TRADE, IMPLEMENTS, and MACHINERY in and about the premises; a POLICY OF ASSURANCE for £2600, together with the GOODWILL of the BUSINESS.

The foundry and buildings are held for the residue of a term of 97 years, from the

20th day of June, 1821, determinable on the death of a life aged 45 years or there-

abouts (on which the above policy is effected), subject to the yearly rent of £20. The iron and brass foundry business has been upwards of 50 years carried on by the

late Mr. Northam, and now offers a good opportunity to persons engaged in the trade.

There is a good and steady business, capable of great extension, and the foundry is

in one of the best situations in Exeter. If not sold in one lot, the property will be

divided.—Further particulars may be obtained of Mr. TUCKER, at the foundry, or of the auctioneers, Paris-street; or Messrs. RODD, DARKE, and C. CORNISH, solicitors, and proctor, at the Close, Exeter. March 19, 1857.

## IN RE ROYAL BRITISH BANK.

MESSRS. WARE, WOOD, and SON have received instructions from the

Executors of the late Mr. James Northam to SELL, BY AUCTION, at the

Half Moon Hotel, on Tuesday, the 14th day of April next, at Three o'clock in the

afternoon, in One Lot, all that well-known and old-established IRON FOUNDRY,

Exeter, with the DWELLING-HOUSE and FOUR COTTAGES adjoining, STOCK-  
IN-TRADE, IMPLEMENTS, and MACHINERY in and about the premises; a POLICY OF ASSURANCE for £2600, together with the GOODWILL of the BUSINESS.</

TO ENGINEERS, RAILWAY COMPANIES, COLLIERIES, OWNERS, MINERS, &c.—ON SALE, FOUR LOCOMOTIVE ENGINES, of various sizes; also, IN STOCK, a variety of Engineers' Tools, Lathes, Planing, Drilling, and Slotting Machines, Punching and Shearing Machines, Screwing ditto, Taps and Dies, &c.; Steam-Engines, Horizontal and Vertical, from 4 to 20-horse; all of the best construction and materials, and ready for immediate delivery.—Apply to WHEATLEY KIRK, engineer, tool maker, railway plant merchant and contractor, &c., Cross-street Chambers, Manchester, and Bonding Wharf, Salford.

1. FIRST-CLASS NEW HORIZONTAL HIGH-PRESSURE STEAM-ENGINE, 20 in. cylinder and 6 ft. stroke, complete, with governors, fly-wheel, feed pump, &c.—Apply to WHEATLEY KIRK, Cross-street Chambers, Cross-street, Manchester.

TO ENGINEERS, CONTRACTORS, AND TOLL COLLECTORS.—FOR SALE, BY PRIVATE CONTRACT, A SUSPENSION BRIDGE, situated on the most direct road between the towns of Usk and Abergavenny, with RIGHT OF TAKING TOLL, or removal of the bridge, at the option of the purchaser. The tolls during the last ten years have averaged upwards of £100 per annum. The bridge is a handsome structure, designed by the late Sir S. Brown. The chains are supported on cast-iron piers, easy of removal. It would be suitable for heavy road traffic over a span of 16 ft.; width 23 ft.—Further particulars may be obtained on application to Messrs. Blower and Davis, solicitors, Usk; or to Messrs. MAY and COOK, civil engineers, Newport, Monmouthshire.

TO MINERS.—TO BE SOLD, THE MACHINERY and PLANT of a valuable LEAD MINE, yielding ore, and offering considerable advantages to the speculator. A lease of the mine may be had upon very liberal terms; and a moderate sum only is required for the machinery, for which long credit would be given, if required. All the plant and buildings are new, and in the highest state of perfection. A very large sum of money has already been expended, and no further outlay is required, excepting for driving the levels now yielding ore. The circumstances which lead to sale will be explained, and further particulars may be had of Messrs. COOPER and HODGSON, solicitors, 3, Verulam-buildings, Gray's Inn, London.

TO IRONMASTERS AND CAPITALISTS.—FIFTEEN ACRES OF FREEHOLD LAND, situated on a main line of railway in one of the Midland Counties, TO BE SOLD AS A SITE FOR BLAST-FURNACES upon the Scotch plan. The site is advantageously situated in the centre of extensive fields of BLACK-BAND IRONSTONE, equal to the best Scotch Blackband, yielding 60 per cent. of iron. There is likewise an inexhaustible supply of hard coal, suitable for iron-making.—Apply by letter, addressed "H. P.," Mining Journal office, No. 26, Fleet-street, London.

TO IRONMASTERS.—FOR SALE, A NEARLY NEW BLAST ENGINE, steam cylinder 62 in., blowing ditto 104 in., stroke 8 ft., with fly-wheel, and all the latest improvements.—Application to be made to THOMAS ELLIS, Pent-y-Prid, Glamorganshire.

TO BE DISPOSED OF, an excellent LOCOMOTIVE TANK ENGINE, cylinders 10½ in. diam., wheels 3 ft. diam., stroke 1 ft. 3 in. Can be shown in work by having notice the previous day.—Apply to Mr. R. G. BARBER, Cinder Hill Colliery, near Nottingham.—March 18, 1857.

SETT OF A TIN MINE FOR SALE.—FOR SALE, THE SETT OF A TIN MINE in CORNWALL; or the proprietor would be willing to treat with respectable parties for working the same. The present high price of tin renders it a most favourable opportunity for this class of investment, as large returns could be made as soon as the water is in fork.—Applications to "H. O.," Mining Journal office, 26, Fleet-street, London, will meet with prompt attention.

FOR SALE, a great bargain, a SET OF THREE PUMPS, SECOND-HAND, 7½ in. diameter, about 100 ft. in length, with 30 ft. rising main and air vessel, stop valves, &c. Each pipe is truly turned and faced. Buckets and clacks of gun metal, well fitted.—Apply to Mr. W. BUTLIN, engineer, Vulcan Steam Works, Northampton.

MINERALS ON LOCH FYNE, ARGYLLSHIRE.—TO LET, a LARGE DEPOSIT of IRON ORES (HEMATITE, RED and BROWN OXIDE) and SPATHOSE (NATURAL STEELSTONE), containing 35 to 70 per cent. The deposits are only 500 yards from the shore.

Also, an extensive deposit of COPPER (Yellow and Green Carbonate, &c.), and RED OXIDE loaded with pyrites; and under it, in a deep ravine, laid open by a torrent, a WHITE STONE loaded with pyrites of copper, very hard, and proved, on comparison, to be the same as found on Lord Breda's estate near Loch Lubnaik. Inspection is solicited.—Apply to Wm. FORLONG, Esq., Erine, near Tarbert.

BUCKFASTLEIGH, DEVON.—A RARE OPPORTUNITY FOR INVESTMENT.

DESIRABLE FARM, WITH MINERAL DEPOSITS, AND GENTLE RESIDENCE.—TO BE SOLD, BY PRIVATE CONTRACT,

either together, or in the undermentioned lots, ALL THAT compact and very desirable ESTATE called HAPSTEAD, situated in the parish of Buckfastleigh, county of Devon. Lot 1. Comprises a FARM HOUSE, BARN, STABLE, POUND HOUSE, and other necessary out-buildings, together with about 45 acres of productive ARABLE and ORCHARD LAND, with a right of pasture on Buckfastleigh Moor. This lot is fee-simple, free from rectorial rent charge, and presents strong indications of mineral deposits, being in the immediate neighbourhood of the Wheal Emma Mine, which has already raised large quantities of copper ore, offers a fair speculation for the investment of capital, which, under judicious management, might be made a very lucrative concern.

Lot 2. Comprises a newly and substantially built GENTLE RESIDENCE, consisting of dining and breakfast rooms, kitchen, dairy, and pantry, with underground cellar and washhouse, four good bedrooms, dressing-room, and large sitting room, and attached thereto is a coach-house, offices, and shrubbery, together with about 9 acres of ORCHARD, MEADOW, and PASTURE LAND. This lot is held for the remainder of a term of 1000 years. The house is erected in a beautiful and healthy situation, commanding extensive views of the surrounding country, and in the immediate vicinity of a fine sporting neighbourhood, abounding with game, and excellent trout streams within a short distance.

For viewing the above property, apply at the Farm House. For any further particulars, and to treat for the purchase, to Mr. E. SAWDYE, land surveyor, auctioneer, &c., West-street, Ashton.—March 18, 1857.

SLATE WORKS.—TO BE SOLD, BY PRIVATE CONTRACT THE FEES-SIMPLE AND INHERITANCE of and in the LINCOMBE WOOD SLATE WORKS, situate in the parish of South Brent, in the county of Devon. The land in which these works are situate consists of about 10 acres. The vein of stone is of first class character, equal to Delabole. The workings, which are the result of operations conducted on a limited scale for many years, are now thrown open to such an extent as to show that by the application of the requisite amount of capital any quantity of material can be turned out, and large profits may be realised. A ready sale has been and can be obtained for all the manufactured slate that has been or can be brought into the market. The works are about four miles from the South Brent and Kingsbridge-road Stations of the South Devon Railway, and within four miles of Bow, whence the manufactured slate has been and can be shipped by water.

There are cottages, blacksmiths' shop, and stables, on the works. The term of the present leases expires at Christmas next; and the owner of the fee, instead of granting a new lease, is desirous to treat with purchasers for the sale of the fee-simple in the property.—For particulars, apply to Messrs. ROOKER, LAVES, and MATTHEWS, solicitors, Plymouth.—Plymouth, March 12, 1857.

TEAM-ENGINES, &c., FOR SALE.—GRANT, DOUGLAS, and CO. have the following FOR SALE:—

ONE NEW 12 in. diam. cylinder HORIZONTAL HIGH-PRESSURE ENGINE, 2½ ft. stroke. (First quality and cheap.)

Two NEW 10 in. diam. cylinder HORIZONTAL HIGH-PRESSURE ENGINES, 2 ft. stroke. (First quality and cheap.)

Also, TEN IRON BOXES for WAGONS, 4, 3½ x 4, 8 x 18 x 4 ft.

Glasgow, Dalmarnock Foundry, March 17, 1857.

STEAM-ENGINES.—TO BE LET ON HIRE, PORTABLE

STEAM-ENGINES, ON WHEELS, for any period, or FOR SALE, from 6 to

25-horse power, which have been successfully introduced and used by contractors, millers, manufacturers, &c., for many years. Several ready for immediate delivery.—Apply to JOHN HALL, jun., 6, Mincing-lane, City, E.C.

FORGE AND ROLLING MILL.—TO BE DISPOSED OF, a recently-erected FORGE and ROLLING MILL, situated in North Staffordshire, with powerful ENGINES, TURNING LATHE, and FIRST-CLASS MACHINERY in every department, in excellent working condition, and well tried, capable of turning out upwards of 100 tons of merchant iron weekly; and, with a moderate outlay, there is abundant room for doubling the yield of manufactured iron.

The site possesses advantages unequalled in the district, having a siding to the main line of the North Staffordshire Railway on one side, and a short line of railway and wharf, belonging to the proprietors, on the other side, leading to and in connection with the Trent and Mersey Canal, thus affording every possible facility for traffic and conducting an extensive business. It also has the advantage of an inexhaustible supply of water for the use of the works.

The whole of the estate, containing upwards of five acres of land, affords space for the erection of 80 to 100 workmen's houses, independently of the forge and mill.

Should the above very valuable property not be immediately disposed of, one or two of the proprietors will be happy to meet with one or two gentlemen in carrying on the business (one of whom is desirable should take an active part, and have a practical knowledge of the trade), and be prepared to meet them upon equal terms as regards capital.—For further particulars, apply to Messrs. KEARY and SHARP, solicitors, Stoke-upon-Trent.

WHOLESALE HOUSES, PUBLIC COMPANIES, and GENERAL ADVERTISERS, can have their ADVERTISING BUSINESS faithfully CONDUCTED by an experienced advertiser, at moderate charges.—Address, Mr. HUBBES, care of Mr. G. W. JORDAN, 169, Strand (W. C.)

THE ENGINEER of Friday, March 20, contains descriptions of Dun-  
can's Water Engine, Greaves' Loom, Libiran's Gas Meter and Regulator, Bleaching and Dyeing Tallow, Richardson's Permanent Way, Leech's Locks, Bursers and Key-keeping Machine, &c., illustrated. Original Articles on Government Mine Inspection, the Endless Railway, Steam Culture, Machine and Land Labour, Schools, Art, &c. Abstract on Mr. Armstrong's Paper on High Speed in Steam Vessels, &c.; Proceedings of the Geological Society; Chemistry Applied to the Arts; Miscellaneous Articles including Railways for the Colonies; Bridge of Boats over the Hooghly, at Calcutta, &c.; Patent Journal, containing New Patents, Abstracts of Specifications; Timber and Metal Markets; Trades of Birmingham, Wolverhampton, and other Districts; and all the Engineering News of the Week. Twenty-four pages, Price 6d.; stamped, 7d.—Bernard Luxton, Publisher, 301, Strand.

UNITED STATES OF AMERICA.—DUPREE, PERKINS, and SAYLES, BOSTON, MASSACHUSETTS, BROKERS for the PURCHASE and SALE of STATE, CITY, and RAILROAD SECURITIES, MANUFACTURING and BANK SHARES, give particular attention to the MINING COMPANIES OF CALIFORNIA, and furnish reliable information concerning them.

DUPREE, PERKINS, and SAYLES refer to the Editor of the Mining Journal.]

RAILWAY WAGONS.—WILLIAM A. ADAMS AND CO. MIDLAND WORKS, BIRMINGHAM. BROAD AND NARROW GAUGE COAL AND IRONSTONE WAGONS, IN STOCK—FOR SALE OR HIRE.

THE RAILWAY CARRIAGE COMPANY, OLD BURY, NEAR BIRMINGHAM. MANUFACTURERS OF EVERY DESCRIPTION OF RAILWAY PLANT AND IRONWORKS. NEW AND SECOND-HAND RAILWAY WAGONS ALWAYS IN STOCK, FOR SALE OR HIRE. LONDON OFFICES, 34, GREAT GEORGE STREET, WESTMINSTER.

TO RAILWAY COMPANIES, AND COAL OR MINERAL PROPRIETORS.—THE BIRMINGHAM WAGON COMPANY (LIMITED) has WAGONS TO BE LET ON HIRE.—For terms, apply to Mr. B. SMITH, secretary, 38, Bennett's-hill, Birmingham.

BURGIN AND WELLS, STEEL CONVERTERS AND REFINERS, MANUFACTURERS OF RAILWAY CARRIAGE AND WAGON SPRINGS, IMPROVED CAST-STEEL FILES, &c. HOLLIS CROFT STEEL WORKS, SHEFFIELD.

JOHN H. PECK, MANUFACTURER OF RAILWAY OIL COVERS, CART AND WAGON COVERS, OIL CLOTH, STACK COVERS, SOAT SHEETS, TARPAULIN, BRATTICE CLOTH, COKE AND CORN SACKS, POTATO BAGS, TWINE, &c., WIGAN. LONDON AGENT.—T. E. WELLER, 15, Duke-street, Adelphi.

BRYAN, McCRAKEN, AND CO., MERCHANTS, AND GENERAL COMMISSION AGENTS, NEWCASTLE-ON-TYNE. Offices, Three Indian Kings-court.

WILLIAM FOX AND SON, METAL AGENTS, NO. 39, OLD HALL STREET, LIVERPOOL, SOLE AGENTS IN LIVERPOOL for the SALE of the following makes of IRON:—

DAWES AND SON'S, PLANT AND FISHER'S, BUGHTON HALL, JOHN MARSHALL'S, DANIEL ROSE'S.

EVERY DESCRIPTION OF IRON ALWAYS ON SALE. Also, TIN-PLATES, WIRE, RAILWAY SPIKES, &c.

THOMAS GREENER, RAILROAD IRON INSPECTOR, MERTHYR TYDVL, SOUTH WALES, in returning thanks for the many favours and kind patronage of his numerous employers during a period of 20 years in which he has been engaged in the above profession, begs to say that he still CONTINUES to give his ASSIDUOUS ATTENTION to any ORDERS which may be entrusted to his care. Unexceptionable references as to character and ability from the first merchants and engineers. Terms may be known per return of post, on application to the above address.

THE PERMANENT WAY COMPANY.—Among other recent important inventions, the company beg to call particular attention to PRINCE'S PATENT for CASTING RAILWAY CHAIRS; POLE'S PATENT IMPROVED FISH JOINT; PATENT HOLLOW SPIKES; and DR. BOUCHERIE'S IMPROVED PROCESS FOR PRESERVING SLEEPERS, FENCING, TELEGRAPH POSTS, &c., FROM DECAY, which may be seen in operation daily at the Polytechnic Institution, and on the company's premises.

They also solicit engineers to investigate the advantages of their PATENT CHAIRS in TWO PARTS: and to the REPORT of resident engineers upon 200 miles of lines laid about five years since with BARLOW'S PATENT CAST-IRON SLEEPERS. Every information may be had upon application to WM. HOWDEN, Sec.

TO IRONMASTERS.—MAGNETIC IRON ORE.—The CATHERINE AND JANE CONSOLS MINING COMPANY solicit OFFERS for CARGOES of the above-named ORE, put on board at Port Madoe, North Wales, or delivered at Cardiff, Newport, or at Saltney, on the River Dee.

Subjoined is an analysis of the ore. The mine is situated in the Valley of Ffestiniog, about five miles from Port Madoe, and the Ffestiniog Railway passes through the property. An almost unlimited quantity of ore can be raised from the lode, which averages about 18 feet in width, and has been laid open for several hundred fathoms in length.

Samples forwarded on application to the secretary, Mr. E. S. CONN, 28, Clement's-lane, Lombard-street, London; or to the local agent of the company, Mr. A. B. CALLANDER, Broadmead, Penrhyn, Carnarvon, North Wales.

Analysis of Magnetic Iron Ore from the Catherine and Jane Consols Mine, near Port Madoe, North Wales.

Water	5-000
Protocide of iron	37,490 45-4 per cent.
Peroxide of iron	22,700 of iron.
Oxide of manganese	1,420
Silica	18,757
Lime	714
Magnesia	946
Alkalies	1,200
Phosphorus	500
Sulphur	456
Alumina	14,000
Loss	1,817 = 100,000

From the small quantity of sulphur and phosphorus, from the total absence of any other injurious constituents, and from the good percentage of iron, we are of opinion that the ore is of a good commercial quality.

(Signed) H. M. NOAD, Ph.D., F.R.S., F.C.S.

JOHN MITCHELL, F.C.S.

July 1, 1856.

GAS APPARATUS of every description, to SUPPLY any NUMBER of LIGHTS, with every recent improvement, and adapted to every situation and purpose—such as private dwellings, railway stations, mansions, manufacturers, mills, villages, and towns.—Manufactured by JONATHAN WILKINSON, Grimsby.

THE ROTATING BUBBLE is the BEST LABOUR SAVING and MOST EFFICIENT APPARATUS for WASHING STAMPED ORES and SLIMES. It will do from seven to ten times the amount of work of any other apparatus in use, with the attendance of a boy only. A 6 ft. water-wheel will drive two of them, and it turns the ore out cleaner and leaves the waste free from ore. It separates tin from copper; lead from copper, black jack, sulphates of barytes; copper from any veinstuff or matrix. May be seen at work daily at Driggith Mines, near Caldbeck, Cumberland.—For particulars and licenses, apply to DAVID ZENNER, partner, Newcastle-on-Tyne.

WALKER'S NEW PATENT STAMPING MACHINES, for REDUCING ORES, QUARTZ, and OTHER HARD MATERIALS, to any degree of fineness WITHOUT WATER. For CROP ORES, GOLD-BEARING QUARTZ, &c., it will be found invaluable.—May be seen at 17, Cowper-street, City-road, Finsbury-square.

VENTILATION IN COAL PITS.—BIRAM'S PATENT ANEMOMETER, 12 in., 24 in.; 6 in., 23 in. This instrument is extremely portable, delicate, and quite correct.

PIT BAROMETERS, 28s. each: DIALS, PIT LEVELS, &c.

To be had of the manufacturer, JOHN DAVIS, optician, Derby.

PATENT SAFETY FUSE.—THE GREAT EXHIBITION PRIZE MEDAL WAS AWARDED TO THE MANUFACTURERS of the ORIGINAL SAFETY FUSE, BICKFORD, SMITH, DAVEY, and PRYOR, who beg to inform Merchants, Mine Agents, Railway Contractors, and all persons engaged in Blasting Operations, that, for the purpose of protecting the public in the use of a genuine article, the PATENT SAFETY FUSE has now a thread wrought into its centre, which, being patent right, infallibly distinguishes it from all imitations, and ensures the continuity of the gunpowder.

This fuse is protected by a Second Patent, is manufactured by greatly improved machinery, and may be had of any length and size, and adapted to every climate.

Address.—BICKFORD, SMITH, DAVEY, and PRYOR, Finsbury, Cornwall.

SAFETY FUSE.—Messrs. WILLIAM BRUNTON and CO., PENHALICK, near REDRUTH, CORNWALL, MANUFACTURERS of FUSE, of every size and length, as exhibited in the Great Exhibition of 1851, and supplied to the Royal Arsenal at Woolwich, the Arctic Expedition, and every part of the globe.

Messrs. BRUNTON & CO. are at all times PREPARED to EXECUTE UNLIMITED ORDERS FOR SUPPLYING FUSE direct from their own MANUFACTORY, upon warrant that it will prove equal to, if not better, than any to be procured elsewhere.

MESSRS. R. & J. COUPE, ENGINEERS and IRONFOUNDERS MANUFACTURERS of HORIZONTAL HIGH-PRESSURE STEAM-ENGINES, from 10 to 200-horse power; the larger description of engines mounted with their IMPROVED EQUILIBRIUM SLIDE PISTON VALVE, which has proved itself so eminently adapted for winding and other engines.

Also, MANUFACTURERS of their IMPROVED BLAST ENGINES, PUMPING ENGINES, &c. (Vide Editor's Notice in the Mining Journal, Aug. 30, 1856, p. 593, under the head of Improvements in Donkey Engines.)

N. B. NOW ON HAND, completed, and in course of erection, a FEW FIRST-CLASS STEAM-ENGINES (HORIZONTAL):—viz., Two very powerful engines, of 30-horse power, polished 20 in. diameter of cylinder, and 3 ft. stroke; the above engines are mounted with R. and J. COUPE'S improved equilibrium slide valve. Two ditto, of 20-horse power, polished 17 in. diameter of cylinder, and 3 ft. stroke. Two ditto, of 20-horse power, black, 17 in. diameter of cylinder, and 3 ft. stroke. Two ditto, of 12-horse power, polished: two ditto, black, 12 in. diameter of cylinder

## THE MINING SHARE LIST.

Shares.	Mines.	Paid.	Last Price.	Present.	Dividends per Share.	Last Paid.
5120 Alfred Consols (cop.), Phillack [S.E.], 21. 11s. 10d.	£24 1/2	22 23	£16 1 0	£0 0	9 0—Feb. 2, 1857.	
1624 Balleswidden (tin), St. Just	11 1/2	4	12 5 0	0 0	5 0—Jan. 1, 1854.	
4000 Bedford United (copper), Tavistock	21. 1s. 8d.	8 1/2	8 18 6	0 0	5 6—Feb. 26, 1857.	
249 Boscaan (tin), St. Just	20 1/2	103	100 105	15 0 0	3 0—Mar. 4, 1857.	
200 Bodilack (tin, copper), St. Just*	91 1/2	223	391 5 0	5 0	0 0—Feb. 17, 1857.	
160 Brightside and Froggatt Grove, Derbyshire	50	66	3 0 0	3 0	0 0—Apr. 30, 1856.	
100 Brynford Hall (lead), Flint	20	100	13 0 0	5 0	0 0—July 1, 1856.	
1000 Bryntai, Llanddios, Montgomeryshire	7	4	0 5 0	0 0	0 0—July 1, 1856.	
6000 Bwch (silver-lead), Cardiganshire	3	1	0 2 0	0 0	2 6—July 30, 1856.	
1000 Carm Brea (copper, tin), Illogan	15	63 1/2	223 10 0	2 0	0 0—Feb. 18, 1857.	
2048 Carnyorth (tin), St. Just	4 1/2	5 1/2	5 1/2 6	0 0	3 0—June 16, 1856.	
200 Cefn Cwrt Brynco (lead), Cardiganshire	33	55	3 0 0	3 0	0 0—Sept. 4, 1855.	
236 Condurrow (copper, tin), Camborne [S.E.]	20	165	79 0 0	4 0	0 0—Feb. 11, 1857.	
30000 Craven Moor, Limited (lead), Yorkshire	3	1/2	0 0 0	0 0	0 0—Feb. 28, 1856.	
128 Cwmystwyth (lead), Cardiganshire	60	140	70 0 0	5 0	0 0—Aug. 28, 1856.	
250 Derwent Minas (silver-lead), Durham	30 1/2	150	104 5 0	10 0	0 0—Sept. 30, 1856.	
1034 Devon Great Consols (cop.), Tavistock [S.E.]	1	460	450 460	542 0 0	14 0—Jan. 23, 1857.	
672 Ding Dong (tin), Galvast.	32	33	30 32	16 7 6	0 0—Mar. 2, 1857.	
179 Dolcoath (copper, tin), Camborne	257 1/2	310	913 0 0	6 0	0 0—Feb. 9, 1857.	
12800 Drake Walls (tin, copper), Calstock	11. 10s.	3 1/2	3 1/2 0	0 0	2 6—July 29, 1856.	
300 East Daren (lead), Cardiganshire	32	85	21 0 0	3 0	0 0—Feb. 9, 1857.	
128 East Pool (tin, copper), Pool, Illogan	24 1/2	340	230 0 0	7 10 0	0 0—Feb. 25, 1857.	
1024 East Wheal Margaret (tin, copper)	6 1/2	11	103 11 1/2	0 0 0	0 0—Jan. 11, 1854.	
4940 Fowey Consols (copper), Tywardreath	4	6 1/2	6 1/2 1	0 0	0 0—Feb. 17, 1857.	
4448 General Mining Co. for Ireland (cop., lead)	3 1/2	2	1 0 0	0 0	3 3—June 5, 1852.	
1024 Gonamena (copper), St. Cleer	13 1/2	17	16 17	0 0 0	7 6—Dec. 21, 1852.	
6000 Great South Tongus [S.E.]	2 1/2	16	14 1/2 15	0 2 6	0 0—June 27, 1855.	
2066 Great Wheal Vor (tin, cop.), Helston [S.E.]	7	6 1/2	6 1/2 0	0 0 0	0 0—June 20, 1855.	
119 Great Work (tin), Germoe	100	140	211 10 0	7 10 0	0 0—Feb. 27, 1857.	
1024 Herodsfoot (lead), near Liskeard	8 1/2	6	7 12 6	0 0	6 7—Apr. 18, 1854.	
6000 Hington Down Consols (copper), Calstock	8 1/2	4 1/2	2 18 0	0 0	2 6—Nov. 25, 1856.	
2000 Holyford (copper), near Tipperary	11	8 1/2	4 2 6	0 0	5 0—Jan. 28, 1857.	
2560 Isle of Man (Limited)*	25	42	52 17 3	1 10 0	0 0—Mar. 5, 1857.	
78 Jamison (lead), Mold, Flintshire	31. 13s. 6d.	—	380 0 0	0 0	0 0—Mar. 10, 1857.	
20 Laxey Mining Company, Isle of Man	100	1000	1370 0 0	50 0	0 0—Jan. 17, 1857.	
160 Levant (copper, tin), St. Just	2 1/2	85	80 85	0 0 0	2 0—Feb. 17, 1857.	
5000 Lewis Mines (tin, copper), St. Erth	5 1/2	3 1/2	3 1/2 3 1/2	0 0 0	0 0—Dec. 10, 1855.	
4000 Llisburne (lead), Cardiganshire, Wales	13 1/2	129 1/2	251 0 0	4 0	0 0—Feb. 5, 1857.	
6000 Marke Valley (copper), Caradon	11. 10s. 6d.	25	0 5 6	0 0	3 0—Sept. 7, 1855.	
5000 Mendip Hills (lead), Somerset	3 1/2	1/2	1 2 6	0 0	5 0—May 21, 1856.	
5000 Merlin (lead), Flint	3	7	1 11 0	0 0 0	2 6—June 22, 1853.	
25000 Mining Co. of Ireland (copper, lead, coal)	7	13 1/2	15 1/2 12 3 0	0 0 0	0 0—Jan. 1, 1857.	
5000 Nanteus and Penrhyl, Limited (1/2% shares)	1%	2	1 1/2 2 1/2	0 1 6	0 0—Apr. 30, 1857.	
7500 Nantlle Vale (slate), Llanllyfni	1	1	0 3 9	0 0	3 3—Nov. 29, 1854.	
6400 Nether Hearn, Westmorland	2s.	1 1/2	0 2 0	0 0	1 0—May 21, 1856.	
470 Newtonards Mining Company, Co. Down	30	35	48 0 0	1 0	0 0—Oct. 17, 1856.	
200 North Pool (copper, tin), Pool	22 1/2	70	324 0 0	3 0	0 0—Dec. 26, 1854.	
140 North Roskar (copper), Camborne	10	100	102 1/2 107 1/2	249 10 0	4 0—Sept. 26, 1853.	
6000 North Wheal Bassett (cop., tin), Illo. [S.E.]	6 1/2	33	29 1/2 30 1/2	12 3 0	0 0—Feb. 15, 1857.	
6400 Par Consols (copper), St. Blazey [S.E.]	1 1/2	24	22 1/2 23 1/2	28 4 0	1 6—Mar. 3, 1857.	
5000 Peak United (lead), North Derbyshire	7 1/2	94	4 10 0	0 0	10 0—Apr. 12, 1856.	
200 Phoenix (copper, tin), Linkinhorne	100	265	204 10 0	20 0	0 0—Nov. 12, 1856.	
1000 Polberro (tin), St. Agnes (Preferential)	15	—	15 10 9	1 1	1 0—Jan. 10, 1857.	
560 Providence Mines (tin), Uny Lelant	20. 13s. 2d.	87 1/2	87 1/2 90	37 4 6	0 0—Feb. 18, 1857.	
2500 Rhosydol and Bachdeiddon (lead)	11 1/2	13	0 7 0	0 0	3 0—June 18, 1856.	
12000 Sortridge Consols (cop.), Whitechurch [S.E.]	6 1/2	45	42 45	30 0 0	1 0—Feb. 9, 1857.	
226 South Caradon (copper), St. Cleer [S.E.]	2 1/2	12	0 7 6	0 0	2 6—Oct. 25, 1856.	
129 South Crinnis (copper), St. Austell	19	285	285	0 0 0	0 0—June 18, 1855.	
256 South Wheal Frances, Illogan [S.E.], 18 1/2. 18s. 9d.	16	155	150 155	71 0 0	2 0—Jan. 17, 1857.	
1024 Spears Consols (tin), St. Just, Cornwall	3	4	4 8 6	0 0 0	2 6—Dec. 10, 1853.	
250 Spears Moor (copper), St. Just	25. 7s. 8d.	15	4 5 0	0 0 0	10 0—June 13, 1856.	
979 St. Aubyn and Grylls (cop., tin), Breage	51. 14s. 1d.	17	0 17 6	0 0 0	7 6—April 1, 1852.	
94 St. Ives Consols (tin), St. Ives	50	120	125 130	903 0 0	0 0—Feb. 17, 1857.	
9500 Tamar Consols (sl.-lead), Budeston [S.E.]	4 1/2	1	4 13 6	0 0 0	2 6—Feb. 7, 1856.	
6000 Tintroft (copper, tin), Pool, Illogan [S.E.]	9	4 1/2	7 18 6	0 0 0	5 0—Feb. 9, 1857.	
2048 Trehearn (silver-lead), Menheniot	3	—	8 11 3	0 0 0	5 0—Dec. 29, 1855.	
572 Trelyon Consols (tin), St. Ives	11 1/2	18	15 18 1/2	1 15 0	1 0—Feb. 21, 1855.	
96 Treweas (copper), Gwennap, Cornwall	32 1/2	81 1/2	4677 15 0	5 0	0 0—June 4, 1855.	
120 Trethellan (copper), Gwennap, Cornwall	15 1/2	16	403 13 6	2 0	10 0—Apr. 29, 1851.	
4000 Tretol (copper, tin), Bodmin	12 1/2	3	0 5 0	0 0 0	5 0—July 8, 1856.	
4096 Trewha (silver-lead), Menheniot, Cornwall	2	3 1/2	1 9 0	0 0 0	3 0—Dec. 16, 1856.	
100 Trumpet Consols (tin), near Helston	95	60	55 0 0	5 0	0 0—Dec. 20, 1854.	
400 United Mines (copper), Gwennap [S.E.]	40	230	320 230	61 5 0	2 0—Feb. 12, 1856.	
20000 Vale of Towy (lead), Carmarthen [S.E.]	5	1	1 3 1	0 0 0	1 3—May 8, 1856.	
10500 Welsh Potash (silver-lead), Talbont, Card.	5	—	1 0 0	0 0 0	5 0—July 16, 1855.	
20000 Ditto (New Shares of S. each)	3	3 1/2	0 12 0	0 0 0	3 0—July 16, 1855.	
6000 West Bassett (copper), Illogan [S.E.]	1 1/2	35	35 36	9 8 6	0 0—Jan. 19, 1857.	
256 West Caradon (copper), Liskeard [S.E.]	20	170	165 170	278 5 0	4 0—Mar. 9, 1857.	
256 West Damsel (copper), Gwennap	10 7	130	16 0 0	2 0	0 0—Jan. 10, 1857.	
1024 West Providence (tin), St. Erth	5	14	27 15 0	0 0 0	0 0—Jan. 7, 1857.	
400 West Wheal Seton (copper), Camborne	38 1/2	360	61 10 0	5 0	0 0—Feb. 16, 1857.	
1228 West Arthur (copper), Calstock	7 1/2	8 1/2	6 10 0	0 0 0	10 0—Oct. 25, 1855.	
240 Wheal Bal (tin), St. Just	6	5	2 0 0	0 0 0	1 0—Nov. 4, 1855.	
512 Wheal Bassett (copper), Illogan [S.E.]	5 1/2	270	270 280	439 10 0	8 0 0—Feb. 3, 1857.	
256 Wheal Buller (copper), Redruth [S.E.]	5	360	340 360	821 5 0	5 0—Mar. 1, 1857.	
1024 Wheal Charlotte, Perranporth	3 1/2	20	3 5 0	0 0 0	15 0—Dec. 15, 1856.	
250 Wheal Clifford (copper), Gwennap	520	520	33 0 0	8 0 0	0 0—Feb. 18, 1857.	
5000 Wheal Fortescue and Adams [S.E.]	41. 14s.	8	2 8 0	0 0 0	3 0—Dec. 22, 1856.	
5000 Wheal Fortescue, Bodmin	mil.	—	0 2 4 0	0 0 0	1 6—Jan. 14, 1856.	
128 Wheal Friendship (copper), Devon	50	95	2375 1			